

## **APPENDIX C**

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### **Applicant Proposed Measures**

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## APPLICANT PROPOSED MEASURES

The Applicant has adopted, with minor revision to reflect changes in technology, many of the BLM-identified mitigation measures and CEC-approved Conditions of Certification and Compliance Verifications for the PSPP. Most of these measures originally appeared in the CEC's Revised Staff Assessment, Commission Decision, and the BLM's PSPP PA/FEIS. Such measures are identified in the Draft SEIS as Applicant Proposed Measures (APMs) for the PSEGS. These APMs have been proposed to reduce or avoid potential impacts that could result from the PSEGS. The APMs would be implemented like other elements of the PSEGS.

The table below presents the specific APMs, the method of verification, and the governmental agency charged with oversight. The Applicant has chosen to present these measures in the style of the documents from which they first appeared. As such, some of the measures reference tables and figures associated with the original documents. Whenever possible, the BLM has added clarifying references. The full text of the documents identified in these references is available online, as an Appendix to this Draft SEIS, or upon request, as specified below.

- **CEC Palen Solar Power Project Commission Decision (2010)**

<http://www.energy.ca.gov/2010publications/CEC-800-2010-010/CEC-800-2010-010-CMF.PDF>

- **CEC Revised Staff Assessment (2010)**

*Part I:* <http://www.energy.ca.gov/2010publications/CEC-700-2010-007/CEC-700-2010-007-REV-PT1.PDF>

*Part II:* <http://www.energy.ca.gov/2010publications/CEC-700-2010-007/CEC-700-2010-007-REV-PT2.PDF>

- **BLM Palen Solar Power Project PA/FEIS (2011)**

See PSEGS Draft SEIS Appendix B

- **PSIII Revised Plan of Development (2013)**

Available from the BLM upon request. Please contact Frank McMenimen, Project Manager, by mail: 1201 Bird Center Drive, Palm Springs, California 92262; phone: (760) 833-7150; or email: [fmcmenimen@blm.gov](mailto:fmcmenimen@blm.gov).

## APPLICANT PROPOSED MEASURES

Applicant Proposed Measures	Verification	Responsible Agency
<b>GENERAL CONDITIONS</b>		
<b>COMPLIANCE-1, Unrestricted Access:</b> BLM's AO, responsible BLM staff, the CPM, responsible Energy Commission staff, and delegated agencies or consultants shall be guaranteed and granted unrestricted access to the power plant site, related facilities, project-related staff, and the records maintained on-site, for the purpose of conducting audits, surveys, inspections, or general site visits. Although BLM's AO and the CPM will normally schedule site visits on dates and times agreeable to the project owner, BLM's AO and the CPM reserve the right to make unannounced visits at any time.		CEC
<b>COMPLIANCE-2, Compliance Record:</b> The project owner shall maintain project files on-site or at an alternative site approved by BLM's AO and the CPM for the life of the project, unless a lesser period of time is specified by the conditions of certification. The files shall contain copies of all "as-built" drawings, documents submitted as verification for conditions, and other project-related documents. As-built drawings of all facilities including linear facilities shall be provided to the BLM AO for inclusion in the BLM administrative record within 90 days of completion of that portion of the facility or project. BLM and Energy Commission staff and delegate agencies shall, upon request to the project owner, be given unrestricted access to the files maintained pursuant to this condition.		CEC
<p><b>COMPLIANCE-3, Compliance Verification Submittals:</b> Each condition of certification is followed by a means of verification. The verification describes the Energy Commission's procedure(s) to ensure post-certification compliance with adopted conditions. The verification procedures, unlike the conditions, may be modified as necessary by BLM's AO and the CPM.</p> <p>Verification of compliance with the conditions of certification can be accomplished by the following:</p> <ol style="list-style-type: none"> <li>1. Monthly and/or annual compliance reports filed by the project owner or authorized agent, reporting on work done and providing pertinent documentation, as required by the specific conditions of certification;</li> <li>2. Appropriate letters from delegate agencies verifying compliance;</li> <li>3. BLM and Energy Commission staff audits of project records; and/or</li> <li>4. BLM and Energy Commission staff inspections of work, or other evidence that the requirements are satisfied.</li> </ol> <p>Verification lead times associated with start of construction may require the project owner to file submittals during the certification process, particularly if construction is planned to commence shortly after certification.</p> <p>A cover letter from the project owner or authorized agent is required for all compliance submittals and correspondence pertaining to compliance matters. The cover letter subject line shall identify the project by AFC and BLM case file numbers, the appropriate condition(s) of certification by condition number(s), and a brief description of the subject of the submittal. The project owner shall also identify those submittals not required by a condition of certification with a statement such as: "This submittal is for information only and is not required by a specific condition of certification." When submitting supplementary or corrected information, the project owner shall reference the date of the previous submittal and BLM/CEC submittal number.</p> <p>The project owner is responsible for the delivery and content of all verification submittals to the BLM's AO and CPM, whether such condition was satisfied by work performed by the project owner or an agent of the project owner.</p>		CEC



## APPLICANT PROPOSED MEASURES

Applicant Proposed Measures	Verification	Responsible Agency
<b>GENERAL CONDITIONS (cont.)</b>		
<p>All hardcopy submittals shall be addressed to each of the following:</p> <p>John Kalish, Field Manager Dale Rundquist, CPM (CACA-48810) (09 AFC 7C) U.S. Bureau of Land Management California Energy Commission Palm Springs-South Coast Field Office 1516 Ninth Street, MS 2000 1201 Bird Center Drive Palm Springs, CA 92262 Sacramento, CA 95814</p> <p>Those submittals shall be accompanied by a searchable electronic copy, on a CD or by e-mail, as agreed upon by BLM's AO and the CPM.</p> <p>If the project owner desires BLM and/or Energy Commission staff action by a specific date, that request shall be made in the submittal cover letter and shall include a detailed explanation of the effects on the project if that date is not met.</p>		
<p><b>COMPLIANCE-4, Pre-Construction Matrix and Tasks Prior to Start of Construction:</b> Prior to commencing construction, a compliance matrix addressing only those conditions that must be fulfilled before the start of construction shall be submitted by the project owner to BLM's AO and the CPM. This matrix will be included with the project owner's first compliance submittal or prior to the first pre-construction meeting, whichever comes first. It will be submitted in the same format as the compliance matrix described below. In order to begin any on-site mobilization or surface disturbing activities on public land, the BLM AO must approve a written Notice to Proceed (NTP). NTPs will be phased as appropriate to facilitate timely implementation of construction.</p> <p>Construction shall not commence until the pre-construction matrix is submitted, all pre-construction conditions have been complied with, and BLM's AO and the CPM have issued a letter and BLM has issued a NTP to the project owner authorizing construction. Various lead times for submittal of compliance verification documents to BLM's AO and the CPM for conditions of certification are established to allow sufficient BLM and Energy Commission staff time to review and comment and, if necessary, allow the project owner to revise the submittal in a timely manner. This will ensure that project construction may proceed according to schedule.</p> <p>Failure to submit compliance documents within the specified lead-time may result in delays in authorization to commence various stages of project development.</p> <p>If the project owner anticipates commencing project construction as soon as the project is certified, it may be necessary for the project owner to file compliance submittals prior to project certification. Compliance submittals should be completed in advance where the necessary lead time for a required compliance event extends beyond the date anticipated for start of construction. The project owner must understand that the submittal of compliance documents prior to project certification is at the owner's own risk. Any approval by Energy Commission staff is subject to change, based upon BLM's ROW Grant and the Energy Commission Decision.</p>		CEC

### APPLICANT PROPOSED MEASURES

Applicant Proposed Measures	Verification	Responsible Agency
<b>GENERAL CONDITIONS (cont.)</b>		
<p><b>Compliance Reporting</b></p> <p>There are two different compliance reports that the project owner must submit to assist BLM's AO and the CPM in tracking activities and monitoring compliance with the terms and conditions of BLM's ROW Grant and the Energy Commission Decision. During construction, the project owner or authorized agent will submit monthly compliance reports. During operation, an annual compliance report must be submitted. These reports, and the requirement for an accompanying compliance matrix, are described below. The majority of the conditions of certification require that compliance submittals be submitted to BLM's AO and the CPM in the monthly or annual compliance reports.</p>		
<p><b>COMPLIANCE-5, Compliance Matrix:</b> A compliance matrix shall be submitted by the project owner to BLM's AO and the CPM along with each monthly and annual compliance report. The compliance matrix is intended to provide BLM's AO and the CPM with the current status of all conditions of certification in a spreadsheet format. The compliance matrix must identify:</p> <ol style="list-style-type: none"> <li>1. the technical area;</li> <li>2. the condition number;</li> <li>3. a brief description of the verification action or submittal required by the condition;</li> <li>4. the date the submittal is required (e.g., 60 days prior to construction, after final inspection, etc.);</li> <li>5. the expected or actual submittal date;</li> <li>6. the date a submittal or action was approved by the Chief Building Official (CBO), BLM's AO, CPM, or delegate agency, if applicable; and</li> <li>7. the compliance status of each condition, e.g., "not started," "in progress" or "completed" (include the date).</li> <li>8. if the condition was amended, the date of the amendment.</li> </ol> <p>Satisfied conditions shall be placed at the end of the matrix.</p>		CEC
<p><b>COMPLIANCE-6, Monthly Compliance Report:</b> The first monthly compliance report is due one month following the Energy Commission business meeting date upon which the project was approved, unless otherwise agreed to by BLM's AO and the CPM. The first monthly compliance report shall include the AFC and BLM case file numbers and an initial list of dates for each of the events identified on the Key Events List. The Key Events List Form is found at the end of this section.</p> <p>During pre-construction and construction of each power plant, the project owner or authorized agent shall submit an original and an electronic searchable version of the monthly compliance report within 10 working days after the end of each reporting month or other period of time agreed to by BLM's AO and the CPM. Monthly compliance reports shall be clearly identified for the month being reported. The reports shall contain, at a minimum:</p> <ol style="list-style-type: none"> <li>1. A summary of the current project construction status, a revised/updated schedule if there are significant delays, and an explanation of any significant changes to the schedule;</li> </ol>		CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>GENERAL CONDITIONS (cont.)</b>		
<p>2. Documents required by specific conditions to be submitted along with the monthly compliance report. Each of these items must be identified in the transmittal letter, as well as the conditions they satisfy and submitted as attachments to the monthly compliance report;</p> <p>3. An initial, and thereafter updated, compliance matrix showing the status of all conditions of certification (fully satisfied conditions do not need to be included in the matrix after they have been reported as completed);</p> <p>4. A list of conditions that have been satisfied during the reporting period, and a description or reference to the actions that satisfied the condition;</p> <p>5. A list of any submittal deadlines that were missed, accompanied by an explanation and an estimate of when the information will be provided;</p> <p>6. A cumulative listing of any approved changes to conditions of certification;</p> <p>7. A listing of any filings submitted to, or permits issued by, other governmental agencies during the month;</p> <p>8. A projection of project compliance activities scheduled during the next two months. The project owner shall notify BLM's AO and the CPM as soon as any changes are made to the project construction schedule that would affect compliance with conditions of certification;</p> <p>9. A listing of the month's additions to the on-site compliance file; and</p> <p>10. A listing of complaints, notices of violation, official warnings, and citations received during the month, a description of the resolution of the resolved actions, and the status of any unresolved actions.</p> <p>All sections, exhibits, or addendums shall be separated by tabbed dividers or as acceptable by BLM's AO and the CPM.</p>		
<p><b>COMPLIANCE-7: Annual Compliance Report:</b> After construction of each power plant is complete or when a power plant goes into commercial operations, the project owner shall submit annual compliance reports instead of monthly compliance reports. The reports are for each year of commercial operation and are due to BLM's AO and the CPM each year at a date agreed to by BLM's AO and the CPM. Annual compliance reports shall be submitted over the life of the project unless otherwise specified by BLM's AO and the CPM. Each annual compliance report shall include the AFC and BLM case file numbers, identify the reporting period and shall contain the following:</p> <p>1. An updated compliance matrix showing the status of all conditions of certification (fully satisfied conditions do not need to be included in the matrix after they have been reported as completed);</p> <p>2. A summary of the current project operating status and an explanation of any significant changes to facility operations during the year;</p> <p>3. Documents required by specific conditions to be submitted along with the annual compliance report. Each of these items must be identified in the transmittal letter, with the condition it satisfies, and submitted as attachments to the annual compliance report;</p>		CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>GENERAL CONDITIONS (cont.)</b>		
<p>4. A cumulative listing of all post-certification changes by the Energy Commission or changes to the BLM ROW grant or approved POD by BLM, or cleared by BLM's AO and the CPM;</p> <p>5. An explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided;</p> <p>6. A listing of filings submitted to, or permits issued by, other governmental agencies during the year;</p> <p>7. A projection of project compliance activities scheduled during the next year;</p> <p>8. A listing of the year's additions to the on-site compliance file;</p> <p>9. An evaluation of the on-site contingency plan for unplanned facility closure, including any suggestions necessary for bringing the plan up to date [see Compliance Conditions for Facility Closure addressed later in this section]; and</p> <p>10. A listing of complaints, notices of violation, official warnings, and citations received during the year, a description of the resolution of any resolved matters, and the status of any unresolved matters.</p>		
<p><b>COMPLIANCE-8: Confidential Information:</b> Any information that the project owner deems confidential shall be submitted to the Energy Commission's executive director with an application for confidentiality pursuant to Title 20, California Code of Regulations, section 2505(a). Any information that is determined to be confidential shall be kept confidential as provided for in Title 20, California Code of Regulations, section 2501 et. seq.</p> <p>Any information the ROW holder deems confidential shall be submitted to the BLM AO with a written request for said confidentiality along with a justification for the request in accordance with 43 CFR 2804.13. All confidential submissions to BLM should be clearly stamped "proprietary information" by the holder when submitted.</p>		CEC
<p><b>COMPLIANCE-9, Reporting of Complaints, Notices, and Citations:</b> Prior to the start of construction, the project owner must send a letter to property owners living within one mile of the project notifying them of a telephone number to contact project representatives with questions, complaints or concerns. If the telephone is not staffed 24 hours per day, it shall include automatic answering with date and time stamp recording. All recorded complaints shall be responded to within 24 hours. The telephone number shall be posted at the project site and made easily visible to passersby during construction and operation. The telephone number shall be provided to BLM's AO and the CPM who will post it on the Energy Commission's web page at: <a href="http://www.energy.ca.gov/sitingcases/power_plants_contacts.html">http://www.energy.ca.gov/sitingcases/power_plants_contacts.html</a>.</p> <p>Any changes to the telephone number shall be submitted immediately to BLM's AO and the CPM, who will update the web page.</p> <p>In addition to the monthly and annual compliance reporting requirements described above, the project owner shall report and provide copies to BLM's AO and the CPM of all complaint forms, including noise and lighting complaints, notices of violation, notices of fines, official warnings, and citations, within 10 days of receipt. Complaints shall be logged and numbered. Noise complaints shall be recorded on the form provided in the NOISE conditions of certification. All other complaints shall be recorded on the complaint form (Attachment A).</p>		CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>GENERAL CONDITIONS (cont.)</b>		
<p><b>COMPLIANCE-10, Planned Closure:</b> In order to ensure that a planned facility closure does not create adverse impacts, a closure process that provides for careful consideration of available options and applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of closure, will be undertaken. To ensure adequate review of a planned project closure, the project owner shall submit a revision or update to the approved Closure, Revegetation and Rehabilitation Plan to BLM and the Energy Commission for review and approval at least 12 months (or other period of time agreed to by BLM's AO and the CPM) prior to commencement of closure activities. The project owner shall file 50 copies and 50 CDs with the Energy Commission and 10 copies and 10 CDs with BLM (or other number of copies agreed upon by BLM's AO and the CPM) of a proposed facility closure plan/Closure, Revegetation and Rehabilitation Plan.</p> <p>The plan shall:</p> <ol style="list-style-type: none"> <li>1. identify and discuss any impacts and mitigation to address significant adverse impacts associated with proposed closure activities and to address facilities, equipment, or other project related materials that must be removed from the site;</li> <li>2. identify a schedule of activities for closure of the power plant site, transmission line corridor, and all other appurtenant facilities constructed as part of the project;</li> <li>3. address conformance of the plan with all applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of facility closure, and applicable conditions of certification; and.</li> <li>4. Address any changes to the site revegetation, rehabilitation, monitoring and long-term maintenance specified in the existing plan that are needed for site revegetation and rehabilitation to be successful.</li> </ol> <p>Prior to submittal of an amended or revised Closure, Revegetation and Restoration Plan, a meeting shall be held between the project owner, BLM's AO and the Energy Commission CPM for the purpose of discussing the specific contents of the plan.</p> <p>In the event that there are significant issues associated with the proposed facility Closure, Revegetation and Restoration plan's approval, or the desires of local officials or interested parties are inconsistent with the plan, BLM's AO the CPM shall hold one or more workshops and/or BLM and the Energy Commission may hold public hearings as part of its approval procedure.</p> <p>As necessary, prior to or during the closure process, the project owner shall take appropriate steps to eliminate any immediate threats to public health and safety and the environment, but shall not commence any other closure activities until BLM and the Energy Commission approve the facility Closure, Revegetation and Restoration plan.</p>		CEC
<p><b>COMPLIANCE-11, Unplanned Temporary Closure:</b> In order to ensure that public health and safety and the environment are protected in the event of an unplanned temporary facility closure, it is essential to have an On-Site Contingency Plan in place. The On-Site Contingency Plan will help to ensure that all necessary steps to mitigate public health and safety impacts and environmental impacts are taken in a timely manner.</p> <p>The project owner shall submit an On-Site Contingency Plan for BLM's AO and CPM review and approval. The plan shall be submitted no less than 60 days (or other time agreed to by BLM's AO and the CPM) after approval of any NTP or letter</p>		CEC

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>GENERAL CONDITIONS (cont.)</b>		
<p>granting approval to commence construction for each phase of construction. A copy of the approved plan must be in place during commercial operation of the facility and shall be kept at the site at all times.</p> <p>The project owner, in consultation with BLM's AO and the CPM, will update the On-Site Contingency Plan as necessary. BLM's AO and the CPM may require revisions to the On-Site Contingency Plan over the life of the project. In the annual compliance reports submitted to the Energy Commission, the project owner will review the On-Site Contingency Plan, and recommend changes to bring the plan up to date. Any changes to the plan must be approved by BLM's AO and the CPM.</p> <p>The On-Site Contingency Plan shall provide for taking immediate steps to secure the facility from trespassing or encroachment. In addition, for closures of more than 90 days, unless other arrangements are agreed to by BLM's AO and the CPM, the plan shall provide for removal of hazardous materials and hazardous wastes, draining of all chemicals from storage tanks and other equipment, and the safe shutdown of all equipment. (Also see specific conditions of certification for the technical areas of Hazardous Materials Management and Waste Management.)</p> <p>In addition, consistent with requirements under unplanned permanent closure addressed below, the nature and extent of insurance coverage, and major equipment warranties must also be included in the On-Site Contingency Plan. In addition, the status of the insurance coverage and major equipment warranties must be updated in the annual compliance reports.</p> <p>In the event of an unplanned temporary closure, the project owner shall notify BLM's AO and the CPM, as well as other responsible agencies, by telephone, fax, or e-mail, within 24 hours and shall take all necessary steps to implement the On-Site Contingency Plan. The project owner shall keep BLM's AO and the CPM informed of the circumstances and expected duration of the closure.</p> <p>If BLM's AO and the CPM determine that an unplanned temporary closure is likely to be permanent, or for a duration of more than six months, a Closure Plan consistent with the requirements for a planned closure shall be developed and submitted to BLM's AO and the CPM within 90 days of BLM's AO and the CPM's determination (or other period of time agreed to by BLM's AO and the CPM).</p>		
<p><b>COMPLIANCE-12, Unplanned Permanent Closure:</b> The On-Site Contingency Plan required for unplanned temporary closure shall also cover unplanned permanent facility closure. All of the requirements specified for unplanned temporary closure shall also apply to unplanned permanent closure.</p> <p>In addition, the On-Site Contingency Plan shall address how the project owner will ensure that all required closure steps will be successfully undertaken in the event of abandonment.</p> <p>In the event of an unplanned permanent closure, the project owner shall notify BLM's AO and the CPM, as well as other responsible agencies, by telephone, fax, or e-mail, within 24 hours and shall take all necessary steps to implement the On-Site Contingency Plan. The project owner shall keep BLM's AO and the CPM informed of the status of all closure activities.</p> <p>To ensure that public health and safety and the environment are protected in the event of an unplanned permanent closure, the project owner shall submit an On-Site Contingency Plan no less than 60 days after a NTP is issued for each phase of development.</p>		CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
GENERAL CONDITIONS (cont.)		
<p><b>COMPLIANCE 13, Post-Certification Changes to the Decision:</b> Amendments, ownership Changes, Staff Approved Project Modifications and Verification Changes: The project owner must petition the Energy Commission pursuant to Title 20, California Code of Regulations, section 1769, in order to modify the project (including linear facilities) design, operation or performance requirements, and to transfer ownership or operational control of the facility. The BLM ROW holder must file a written request in the form of an application to the BLM AO in order to change the terms and conditions of their ROW grant or POD. Written requests will be in a manner prescribed by the BLM AO. Implementation of a project modification without first securing BLM approval may result in financial and other liabilities in accordance with 43 CFR 2808.</p> <p>It is the responsibility of the project owner to contact BLM's AO and the CPM to determine if a proposed project change should be considered a project modification pursuant to section 1769. Implementation of a project modification without first securing Energy Commission staff approval may result in enforcement action that could result in civil penalties in accordance with section 25534 of the Public Resources Code.</p> <p>A petition is required for amendments and for staff approved project modifications as specified below. Both shall be filed as a "Petition to Amend." Staff will determine if the change is significant or insignificant. For verification changes, a letter from the project owner is sufficient. In all cases, the petition or letter requesting a change should be submitted to BLM's AO and the CPM, who will file it with the Energy Commission's Dockets Unit in accordance with Title 20, California Code of Regulations, section 1209.</p> <p>The criteria that determine which type of approval and the process that applies are explained below. They reflect the provisions of Section 1769 at the time this condition was drafted. If the Commission's rules regarding amendments are amended, the rules in effect at the time an amendment is requested shall apply.</p> <p><b>Amendment</b></p> <p>The project owner shall petition the Energy Commission, pursuant to Title 20, California Code of Regulations, Section 1769(a), when proposing modifications to the project (including linear facilities) design, operation, or performance requirements. If a proposed modification results in deletion or change of a condition of certification, or makes changes that would cause the project not to comply with any applicable laws, ordinances, regulations or standards, the petition will be processed as a formal amendment to the Energy Commission's final decision, which requires public notice and review of the BLM-Energy Commission staff analysis, and approval by the full Energy Commission. The petition shall be in the form of a legal brief and fulfill the requirements of Section 1769(a). Upon request, the CPM will provide you with a sample petition to use as a template.</p> <p>The ROW holder shall file an application to amend the BLM ROW grant for any substantial deviation or change in use in accordance with the regulations at 43 CFR 2807.20. The requirements to amend a ROW grant are the same as when filing a new application including paying processing and monitoring fees and rent.</p> <p><b>Staff Approved Project Modification</b></p> <p>Modifications that do not result in deletions or changes to conditions of certification, and that are compliant with laws, ordinances, regulations and standards, may be authorized by BLM's AO and the CPM as a staff approved project modification (SAPM) pursuant to section 1769(a) (2). Once staff files an intention to approve the proposed project</p>		CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>GENERAL CONDITIONS (cont.)</b>		
<p>modifications, any person may file an objection to staff's determination within 14 days of service on the grounds that the modification does not meet the criteria of section 1769 (a)(2). If a person objects to staff's determination, the petition must be processed as a formal amendment to the decision and must be approved by the full commission at a noticed business meeting or hearing. BLM and the Energy Commission intend to integrate a process to jointly approve SAPMs to avoid duplication of approval processes and ensure appropriate documentation for the public record.</p> <p><b>Change of Ownership</b></p> <p>Change of ownership or operational control also requires that the project owner file a petition pursuant to section 1769(b). This process requires public notice and approval by the full Commission and BLM. The petition shall be in the form of a legal brief and fulfill the requirements of Section 1769(b). Upon request, the CPM will provide you with a sample petition to use as a template. The transfer of ownership of a BLM ROW grant must be through the filing of an application for assignment of the grant in accordance with 43 CFR 2807.21.</p> <p><b>Verification Change</b></p> <p>A verification may be modified by BLM's AO and the CPM without requesting an amendment to the ROW Grant or Energy Commission decision if the change does not require modifying any conditions of certification and provides an effective alternate means of verification.</p>		
<b>FACILITY DESIGN</b>		
<p><b>GEN-1, California Building Standards Code:</b> The project owner shall design, construct, and inspect the project in accordance with the 2007 California Building Standards Code (CBSC), also known as Title 24, California Code of Regulations, which encompasses the California Building Code (CBC), California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other applicable engineering LORS in effect at the time initial design plans are submitted to the CBO for review and approval (the CBSC in effect is the edition that has been adopted by the California Building Standards Commission and published at least 180 days previously). The project owner shall ensure that all the provisions of the above applicable codes are enforced during the construction, addition, alteration, moving, demolition, repair, or maintenance of the completed facility. All transmission facilities (lines, switchyards, switching stations and substations) are covered in the conditions of certification in the Transmission System Engineering section of this document.</p> <p>In the event that the initial engineering designs are submitted to the CBO when the successor to the 2007 CBSC is in effect, the 2007 CBSC provisions shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.</p> <p>The project owner shall ensure that all contracts with contractors, subcontractors, and suppliers clearly specify that all work performed and materials supplied comply with the codes listed above.</p>	<p>Within 30 days following receipt of the certificate of occupancy, the project owner shall submit to the CPM a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation, and inspection requirements of the applicable LORS and the Energy Commission's decision have been met in the area of facility design. The project owner shall provide the CPM a copy of the certificate of occupancy within 30 days of receipt from the CBO.</p> <p>Once the certificate of occupancy has been issued, the project owner shall inform the CPM at least 30 days prior to any construction, addition, alteration, moving, demolition, repair, or maintenance to be performed on any portion(s) of the completed facility that requires CBO approval for compliance with the above codes. The CPM will then determine if the CBO needs to approve the work.</p>	CEC



## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>FACILITY DESIGN (cont.)</b>		
<p><b>GEN-2, Schedule of Facility Design Submittals:</b> Before submitting the initial engineering designs for CBO review, the project owner shall furnish the CPM and the CBO with a schedule of facility design submittals, and master drawing and master specifications lists. The schedule shall contain a list of proposed submittal packages of designs, calculations, and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide specific packages to the CPM upon request.</p>	<p>At least 60 days (or a project owner and CBO approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO and to the CPM the schedule, the master drawings, and master specifications list of documents to be submitted to the CBO for review and approval. These documents shall be the pertinent design documents for the major structures, systems, and equipment defined above in Condition of Certification <b>GEN-2</b>. Major structures and equipment may be added to or deleted from the list only with CPM approval. The project owner shall provide schedule updates in the monthly compliance report.</p>	CEC
<p><b>GEN-3, Payments to the CBO:</b> The project owner shall make payments to the CBO for design review, plan checks, and construction inspections, based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. These fees may be consistent with the fees listed in the 2007 CBC, adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be otherwise agreed upon by the project owner and the CBO.</p>	<p>The project owner shall make the required payments to the CBO in accordance with the agreement between the project owner and the CBO. The project owner shall send a copy of the CBO's receipt of payment to the CPM in the next monthly compliance report indicating that applicable fees have been paid.</p>	CEC
<p><b>GEN-4, Resident Engineer:</b> Prior to the start of rough grading, the project owner shall assign a California- registered architect, or a structural or civil engineer, as the resident engineer (RE) in charge of the project. All transmission facilities (lines, switchyards, switching stations, and substations) are addressed in the conditions of certification in the Transmission System Engineering section of this document.</p> <p>The RE may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may be delegated responsibility for mechanical and electrical portions of the project, respectively. A project may be divided into parts, provided that each part is clearly defined as a distinct unit. Separate assignments of general responsibility may be made for each designated part.</p> <p>The RE shall:</p> <ol style="list-style-type: none"> <li>1. Monitor progress of construction work requiring CBO design review and inspection to ensure compliance with LORS;</li> <li>2. Ensure that construction of all facilities subject to CBO design review and inspection conforms in every material respect to applicable LORS, these conditions of certification, approved plans, and specifications;</li> <li>3. Prepare documents to initiate changes in approved drawings and specifications when either directed by the project owner or as required by the conditions of the project;</li> <li>4. Be responsible for providing project inspectors and testing agencies with complete and up-to-date sets of stamped drawings, plans, specifications, and any other required documents;</li> <li>5. Be responsible for the timely submittal of construction progress reports to the CBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and</li> </ol>	<p>At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, the resume and registration number of the RE and any other delegated engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the RE and other delegated engineer(s) within 5 days of the approval.</p> <p>If the RE or the delegated engineer(s) is subsequently reassigned or replaced, the project owner has 5 days to submit the resume and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within 5 days of the approval.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>FACILITY DESIGN (cont.)</b>		
<p>6. Be responsible for notifying the CBO of corrective action or the disposition of items noted on laboratory reports or other tests when they do not conform to approved plans and specifications.</p> <p>The resident engineer (or his delegate) must be located at the project site, or be available at the project site within a reasonable period of time, during any hours in which construction takes place.</p> <p>The RE shall have the authority to halt construction and to require changes or remedial work if the work does not meet requirements.</p> <p>If the RE or the delegated engineers are reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer.</p>		
<p><b>GEN-5, California Registered Engineer Assignments:</b> Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: a civil engineer; a soils, geotechnical, or civil engineer experienced and knowledgeable in the practice of soils engineering; and an engineering geologist. Prior to the start of construction, the project owner shall assign at least one of each of the following California registered engineers to the project: a design engineer who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; a mechanical engineer; and an electrical engineer. (California Business and Professions Code section 6704 et seq., and sections 6730, 6731 and 6736 require state registration to practice as a civil engineer or structural engineer in California). All transmission facilities (lines, switchyards, switching stations, and substations) are handled in the conditions of certification in the Transmission System Engineering section of this document.</p> <p>The tasks performed by the civil, mechanical, electrical, or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (for example, proposed earthwork, civil structures, power plant structures, equipment support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer.</p> <p>The project owner shall submit, to the CBO for review and approval, the names, qualifications, and registration numbers of all responsible engineers assigned to the project.</p> <p>If any one of the designated responsible engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned responsible engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer.</p> <p>A. The civil engineer shall:</p> <ol style="list-style-type: none"> <li>1. Review the foundation investigations, geotechnical, or soils reports prepared by the soils engineer, the geotechnical engineer, or by a civil engineer experienced and knowledgeable in the practice of soils engineering;</li> <li>2. Design (or be responsible for the design of), stamp, and sign all plans, calculations, and specifications for proposed site work, civil works, and related facilities requiring design review and inspection by the CBO. At a minimum, these include: grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads and sanitary sewer systems; and</li> </ol>	<p>At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, resumes and registration numbers of the responsible civil engineer, soils (geotechnical) engineer and engineering geologist assigned to the project.</p> <p>At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of construction, the project owner shall submit to the CBO for review and approval, resumes and registration numbers of the responsible design engineer, mechanical engineer, and electrical engineer assigned to the project.</p> <p>The project owner shall notify the CPM of the CBO's approvals of the responsible engineers within 5 days of the approval.</p> <p>If the designated responsible engineer is subsequently reassigned or replaced, the project owner has 5 days in which to submit the resume and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within 5 days of the approval.</p>	CEC

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>FACILITY DESIGN (cont.)</b>		
<p>3. Provide consultation to the RE during the construction phase of the project and recommend changes in the design of the civil works facilities and changes to the construction procedures.</p> <p>B. The soils engineer, geotechnical engineer, or civil engineer experienced and knowledgeable in the practice of soils engineering, shall:</p> <ol style="list-style-type: none"> <li>1. Review all the engineering geology reports;</li> <li>2. Prepare the foundation investigations, geotechnical, or soils reports containing field exploration reports, laboratory tests, and engineering analysis detailing the nature and extent of the soils that could be susceptible to liquefaction, rapid settlement or collapse when saturated under load;</li> <li>3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with requirements set forth in the 2007 CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both); and</li> <li>4. Recommend field changes to the civil engineer and RE.</li> </ol> <p>This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform to the predicted conditions used as the basis for design of earthwork or foundations.</p> <p>C. The engineering geologist shall:</p> <ol style="list-style-type: none"> <li>1. Review all the engineering geology reports and prepare a final soils grading report; and</li> <li>2. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 2007 CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both).</li> </ol> <p>D. The design engineer shall:</p> <ol style="list-style-type: none"> <li>1. Be directly responsible for the design of the proposed structures and equipment supports;</li> <li>2. Provide consultation to the RE during design and construction of the project;</li> <li>3. Monitor construction progress to ensure compliance with engineering LORS;</li> <li>4. Evaluate and recommend necessary changes in design; and</li> <li>5. Prepare and sign all major building plans, specifications, and calculations.</li> </ol> <p>E. The mechanical engineer shall be responsible for, and sign and stamp a statement with, each mechanical submittal to the CBO, stating that the proposed final design plans, specifications, and calculations conform to all of the mechanical engineering design requirements set forth in the Energy Commission's decision.</p> <p>F. The electrical engineer shall:</p> <ol style="list-style-type: none"> <li>1. Be responsible for the electrical design of the project; and</li> <li>2. Sign and stamp electrical design drawings, plans, specifications, and calculations.</li> </ol>		

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>FACILITY DESIGN (cont.)</b>		
<p><b>GEN-6, Certified Special Inspector:</b> Prior to the start of an activity requiring special inspection, including prefabricated assemblies, the project owner shall assign to the project, qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 2007 CBC. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in conditions of certification in the Transmission System Engineering section of this document.</p> <p>A certified weld inspector, certified by the American Welding Society (AWS), and/or American Society of Mechanical Engineers (ASME) as applicable, shall inspect welding performed on-site requiring special inspection (including structural, piping, tanks and pressure vessels).</p> <p>The special inspector shall:</p> <ol style="list-style-type: none"> <li>1. Be a qualified person who shall demonstrate competence, to the satisfaction of the CBO, for inspection of the particular type of construction requiring special or continuous inspection;</li> <li>2. Inspect the work assigned for conformance with the approved design drawings and specifications;</li> <li>3. Furnish inspection reports to the CBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction, then, if uncorrected, to the CBO and the CPM for corrective action; and</li> <li>4. Submit a final signed report to the RE, CBO, and CPM, stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans, specifications, and other provisions of the applicable edition of the CBC.</li> </ol>	<p>At least 15 days (or project owner- and CBO-approved alternative time frame) prior to the start of an activity requiring special inspection, the project owner shall submit to the CBO for review and approval, with a copy to the CPM, the name(s) and qualifications of the certified weld inspector(s), or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. The project owner shall also submit to the CPM a copy of the CBO's approval of the qualifications of all special inspectors in the next monthly compliance report.</p> <p>If the special inspector is subsequently reassigned or replaced, the project owner has 5 days in which to submit the name and qualifications of the newly assigned special inspector to the CBO for approval. The project owner shall notify the CPM of the CBO's approval of the newly assigned inspector within 5 days of the approval.</p>	CEC
<p><b>GEN-7, Design and/or Construction Discrepancy:</b> If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend required corrective actions. The discrepancy documentation shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this condition of certification and, if appropriate, applicable sections of the CBC and/or other LORS.</p>	<p>The project owner shall transmit a copy of the CBO's approval of any corrective action taken to resolve a discrepancy to the CPM in the next monthly compliance report. If any corrective action is disapproved, the project owner shall advise the CPM, within 5 days, of the reason for disapproval and the revised corrective action to obtain CBO's approval.</p>	CEC
<p><b>GEN-8, CBO Final Approval:</b> The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The project owner shall request the CBO to inspect the completed structure and review the submitted documents. The project owner shall notify the CPM after obtaining the CBO's final approval. The project owner shall retain one set of approved engineering plans, specifications, and calculations (including all approved changes) at the project site or at another accessible location during the operating life of the project. Electronic copies of the approved plans, specifications, calculations, and marked-up as-builts shall be provided to the CBO for retention by the CPM.</p>	<p>Within 15 days of the completion of any work, the project owner shall submit to the CBO, with a copy to the CPM, in the next monthly compliance report, (a) a written notice that the completed work is ready for final inspection, and (b) a signed statement that the work conforms to the final approved plans. After storing the final approved engineering plans, specifications, and calculations described above, the project owner shall submit to the CPM a letter stating both that the above documents have been stored and the storage location of those documents.</p> <p>Within 90 days of the completion of construction, the project owner shall provide to the CBO three sets of electronic copies of the above documents at the project owner's expense. These are to be provided in the form of "read only" (Adobe .pdf 6.0) files, with restricted (password-protected) printing privileges, on archive quality compact discs.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>FACILITY DESIGN (cont.)</b>		
<p><b>CIVIL-1, Submittals to the CBO:</b> The project owner shall submit to the CBO for review and approval the following:</p> <ol style="list-style-type: none"> <li>1. Design of the proposed drainage structures and the grading plan;</li> <li>2. An erosion and sedimentation control plan;</li> <li>3. Related calculations and specifications, signed and stamped by the responsible civil engineer; and</li> <li>4. Soils, geotechnical, or foundation investigations reports required by the 2007 CBC.</li> </ol>	<p>At least 15 days (or project owner- and CBO-approved alternative time frame) prior to the start of site grading the project owner shall submit the documents described above to the CBO for design review and approval. In the next monthly compliance report following the CBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the CBO.</p>	CEC
<p><b>CIVIL-2, Unforeseen adverse soil or geologic conditions:</b> The resident engineer shall, if appropriate, stop all earthwork and construction in the affected areas when the responsible soils engineer, geotechnical engineer, or the civil engineer experienced and knowledgeable in the practice of soils engineering identifies unforeseen adverse soil or geologic conditions. The project owner shall submit modified plans, specifications, and calculations to the CBO based on these new conditions. The project owner shall obtain approval from the CBO before resuming earthwork and construction in the affected area.</p>	<p>The project owner shall notify the CPM within 24 hours, when earthwork and construction is stopped as a result of unforeseen adverse geologic/soil conditions. Within 24 hours of the CBO's approval to resume earthwork and construction in the affected areas, the project owner shall provide to the CPM a copy of the CBO's approval.</p>	CEC
<p><b>CIVIL-3, Inspections and Discrepancy Reports:</b> The project owner shall perform inspections in accordance with the 2007 CBC. All plant site-grading operations, for which a grading permit is required, shall be subject to inspection by the CBO.</p> <p>If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the CBO, and the CPM. The project owner shall prepare a written report, with copies to the CBO and the CPM, detailing all discrepancies, non-compliance items, and the proposed corrective action.</p>	<p>Within five days of the discovery of any discrepancies, the resident engineer shall transmit to the CBO and the CPM a non-conformance report (NCR), and the proposed corrective action for review and approval. Within five days of resolution of the NCR, the project owner shall submit the details of the corrective action to the CBO and the CPM. A list of NCRs, for the reporting month, shall also be included in the following monthly compliance report.</p>	CEC
<p><b>CIVIL-4, Final Grading Plan Approval:</b> After completion of finished grading and erosion and sedimentation control and drainage work, the project owner shall obtain the CBO's approval of the final grading plans (including final changes) for the erosion and sedimentation control work. The civil engineer shall state that the work within his/her area of responsibility was done in accordance with the final approved plans.</p>	<p>Within 30 days (or project owner- and CBO-approved alternative time frame) of the completion of the erosion and sediment control mitigation and drainage work, the project owner shall submit to the CBO, for review and approval, the final grading plans (including final changes) and the responsible civil engineer's signed statement that the installation of the facilities and all erosion control measures were completed in accordance with the final approved combined grading plans, and that the facilities are adequate for their intended purposes, along with a copy of the transmittal letter to the CPM. The project owner shall submit a copy of the CBO's approval to the CPM in the next monthly compliance report.</p>	CEC
<p><b>STRUC-1, Structure Approval:</b> Prior to the start of any increment of construction of any major structure or component listed in Facility Design Table 2 of condition of certification GEN 2, above, the project owner shall submit to the CBO for design review and approval the proposed lateral force procedures for project structures and the applicable designs, plans and drawings for project structures. Proposed lateral force procedures, designs, plans and drawings shall be those for the following items (from Table 2, above):</p>	<p>At least 60 days (or project owner- and CBO-approved alternative time frame) prior to the start of any increment of construction of any structure or component listed in Facility Design Table 2 of condition of certification GEN 2, above, the project owner shall submit to the CBO the above final</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>FACILITY DESIGN (cont.)</b>		
<p>1. Major project structures;</p> <p>2. Major foundations, equipment supports, and anchorage; and</p> <p>3. Large field-fabricated tanks.</p> <p>Construction of any structure or component shall not begin until the CBO has approved the lateral force procedures to be employed in designing that structure or component.</p> <p>The project owner shall:</p> <ol style="list-style-type: none"> <li>1. Obtain approval from the CBO of lateral force procedures proposed for project structures;</li> <li>2. Obtain approval from the CBO for the final design plans, specifications, calculations, soils reports, and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (for example, highest loads, or lowest allowable stresses shall govern). All plans, calculations, and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations, and specifications;</li> <li>3. Submit to the CBO the required number of copies of the structural plans, specifications, calculations, and other required documents of the designated major structures prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation;</li> <li>4. Ensure that the final plans, calculations, and specifications clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. The final designs, plans, calculations, and specifications shall be signed and stamped by the responsible design engineer; and</li> <li>5. Submit to the CBO the responsible design engineer's signed statement that the final design plans conform to applicable LORS.</li> </ol>	<p>design plans, specifications and calculations, with a copy of the transmittal letter to the CPM.</p> <p>The project owner shall submit to the CPM, in the next monthly compliance report, a copy of a statement from the CBO that the proposed structural plans, specifications, and calculations have been approved and comply with the requirements set forth in applicable engineering LORS.</p>	
<p><b>STRUC-2, Structure Document Submittal:</b> The project owner shall submit to the CBO the required number of sets of the following documents related to work that has undergone CBO design review and approval:</p> <ol style="list-style-type: none"> <li>1. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);</li> <li>2. Concrete pour sign-off sheets;</li> <li>3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);</li> <li>4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and</li> <li>5. Reports covering other structural activities requiring special inspections shall be in accordance with the 2007 CBC.</li> </ol>	<p>If a discrepancy is discovered in any of the above data, the project owner shall, within 5 days, prepare and submit an NCR describing the nature of the discrepancies and the proposed corrective action to the CBO, with a copy of the transmittal letter to the CPM. The NCR shall reference the condition(s) of certification and the applicable CBC chapter and section. Within 5 days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the CBO and the CPM.</p> <p>The project owner shall transmit a copy of the CBO's approval or disapproval of the corrective action to the CPM within 15 days. If disapproved, the project owner shall advise the CPM, within 5 days, the reason for disapproval, and the revised corrective action to obtain CBO's approval.</p>	CEC

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>FACILITY DESIGN (cont.)</b>		
<p><b>STRUC-3, Design Change Submittals:</b> The project owner shall submit to the CBO design changes to the final plans required by the 2007 CBC, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give to the CBO prior notice of the intended filing.</p>	<p>On a schedule suitable to the CBO, the project owner shall notify the CBO of the intended filing of design changes, and shall submit the required number of sets of revised drawings and the required number of copies of the other above-mentioned documents to the CBO, with a copy of the transmittal letter to the CPM. The project owner shall notify the CPM, via the monthly compliance report, when the CBO has approved the revised plans.</p>	CEC
<p><b>STRUC-4, Hazardous Materials Transport:</b> Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in the 2007 CBC shall, at a minimum, be designed to comply with the requirements of that chapter.</p>	<p>At least 30 days (or project owner- and CBO-approved alternate time frame) prior to the start of installation of the tanks or vessels containing the above specified quantities of toxic or hazardous materials, the project owner shall submit to the CBO for design review and approval final design plans, specifications, and calculations, including a copy of the signed and stamped engineer's certification.</p> <p>The project owner shall send copies of the CBO approvals of plan checks to the CPM in the following monthly compliance report. The project owner shall also transmit a copy of the CBO's inspection approvals to the CPM in the monthly compliance report following completion of any inspection.</p>	CEC
<p><b>MECH-1, Proposed Final Design Submittal:</b> The project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations for each plant major piping and plumbing system listed in Facility Design Table 2, condition of certification GEN 2, above. Physical layout drawings and drawings not related to code compliance and life safety need not be submitted. The submittal shall also include the applicable QA/QC procedures. Upon completion of construction of any such major piping or plumbing system, the project owner shall request the CBO's inspection approval of that construction.</p> <p>The responsible mechanical engineer shall stamp and sign all plans, drawings, and calculations for the major piping and plumbing systems, subject to CBO design review and approval, and submit a signed statement to the CBO when the proposed piping and plumbing systems have been designed, fabricated, and installed in accordance with all of the applicable laws, ordinances, regulations and industry standards, which may include, but are not limited to:</p> <ol style="list-style-type: none"> <li>1. American National Standards Institute (ANSI) B31.1 (Power Piping Code);</li> <li>2. ANSI B31.2 (Fuel Gas Piping Code);</li> <li>3. ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code);</li> <li>4. ANSI B31.8 (Gas Transmission and Distribution Piping Code);</li> <li>5. Title 24, California Code of Regulations, Part 5 (California Plumbing Code);</li> </ol>	<p>At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of any increment of major piping or plumbing construction listed in Facility Design Table 2, condition of certification GEN 2, above, the project owner shall submit to the CBO for design review and approval the final plans, specifications, and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with applicable LORS, and shall send the CPM a copy of the transmittal letter in the next monthly compliance report.</p> <p>The project owner shall transmit to the CPM, in the monthly compliance report following completion of any inspection, a copy of the transmittal letter conveying the CBO's inspection approvals.</p>	CEC

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>FACILITY DESIGN (cont.)</b>		
<p>6. Title 24, California Code of Regulations, Part 6 (California Energy Code, for building energy conservation systems and temperature control and ventilation systems);</p> <p>7. Title 24, California Code of Regulations, Part 2 (California Building Code); and</p> <p>8. Riverside County codes.</p> <p>The CBO may deputize inspectors to carry out the functions of the code enforcement agency.</p>		
<p><b>MECH-2, Pressure Vessels:</b> For all pressure vessels installed in the plant, the project owner shall submit to the CBO and California Occupational Safety and Health Administration (Cal-OSHA), prior to operation, the code certification papers and other documents required by applicable LORS. Upon completion of the installation of any pressure vessel, the project owner shall request the appropriate CBO and/or Cal-OSHA inspection of that installation.</p> <p>The project owner shall:</p> <ol style="list-style-type: none"> <li>1. Ensure that all boilers and fired and unfired pressure vessels are designed, fabricated, and installed in accordance with the appropriate section of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, or other applicable code. Vendor certification, with identification of applicable code, shall be submitted for prefabricated vessels and tanks; and</li> <li>2. Have the responsible design engineer submit a statement to the CBO that the proposed final design plans, specifications, and calculations conform to all of the requirements set forth in the appropriate ASME Boiler and Pressure Vessel Code or other applicable codes.</li> </ol>	<p>At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of on-site fabrication or installation of any pressure vessel, the project owner shall submit to the CBO for design review and approval, the above listed documents, including a copy of the signed and stamped engineer's certification, with a copy of the transmittal letter to the CPM.</p> <p>The project owner shall transmit to the CPM, in the monthly compliance report following completion of any inspection, a copy of the transmittal letter conveying the CBO's and/or Cal-OSHA inspection approvals.</p>	CEC
<p><b>MECH-3, HVAC and Refrigeration Systems:</b> The project owner shall submit to the CBO for design review and approval the design plans, specifications, calculations, and quality control procedures for any heating, ventilating, air conditioning (HVAC) or refrigeration system. Packaged HVAC systems, where used, shall be identified with the appropriate manufacturer's data sheets.</p> <p>The project owner shall design and install all HVAC and refrigeration systems within buildings and related structures in accordance with the CBC and other applicable codes. Upon completion of any increment of construction, the project owner shall request the CBO's inspection and approval of that construction. The final plans, specifications and calculations shall include approved criteria, assumptions, and methods used to develop the design. In addition, the responsible mechanical engineer shall sign and stamp all plans, drawings and calculations and submit a signed statement to the CBO that the proposed final design plans, specifications and calculations conform with the applicable LORS.</p>	<p>At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of construction of any HVAC or refrigeration system, the project owner shall submit to the CBO the required HVAC and refrigeration calculations, plans, and specifications, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the CBC and other applicable codes, with a copy of the transmittal letter to the CPM.</p>	CEC
<p><b>ELEC-1, Electrical Construction:</b> Prior to the start of any increment of electrical construction for all electrical equipment and systems 480 Volts or higher (see a representative list, below), with the exception of underground duct work and any physical layout drawings and drawings not related to code compliance and life safety, the project owner shall submit, for CBO design review and approval, the proposed final design, specifications, and calculations. Upon approval, the above listed plans, together with design changes and design change notices, shall remain on the site or at another accessible location for the operating life of the project. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in conditions of certification in the Transmission System Engineering section of this document.</p>	<p>At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of each increment of electrical construction, the project owner shall submit to the CBO for design review and approval the above listed documents. The project owner shall include in this submittal a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance with the applicable LORS, and shall send the CPM a copy of the transmittal letter in the next monthly compliance report.</p>	CEC



## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency												
FACILITY DESIGN (cont.)														
<p>A. Final plant design plans shall include:</p> <ul style="list-style-type: none"><li>1. one-line diagrams for the 13.8 kV, 4.16 kV and 480 V systems; and</li><li>2. system grounding drawings.</li></ul> <p>B. Final plant calculations must establish:</p> <ul style="list-style-type: none"><li>1. short-circuit ratings of plant equipment;</li><li>2. ampacity of feeder cables;</li><li>3. voltage drop in feeder cables;</li><li>4. system grounding requirements;</li><li>5. coordination study calculations for fuses, circuit breakers and protective relay settings for the 13.8 kV, 4.16 kV and 480 V systems;</li><li>6. system grounding requirements; and</li><li>7. lighting energy calculations.</li></ul> <p>C. The following activities shall be reported to the CPM in the monthly compliance report:</p> <ul style="list-style-type: none"><li>1. Receipt or delay of major electrical equipment;</li><li>2. Testing or energization of major electrical equipment; and</li><li>3. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the Energy Commission decision.</li></ul>														
TRANSMISSION SYSTEM ENGINEERING														
<p><b>TSE-1, Schedule of Transmission Facility Design Submittals:</b> The project owner shall furnish to the CPM and to the CBO a schedule of transmission facility design submittals, a Master Drawing List, a Master Specifications List, and a Major Equipment and Structure List. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide designated packages to the CPM when requested.</p>	<p>Prior to the start of construction, the project owner shall submit the schedule, a Master Drawing List, and a Master Specifications List to the CBO and to the CPM. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment (see a list of major equipment below). Additions and deletions shall be made to the table only with CPM and CBO approval. The project owner shall provide schedule updates in the Monthly Compliance Report.</p> <p><b>List of Major Equipment Components:</b></p> <table><tr><td>Breakers</td><td>Take-off facilities</td></tr><tr><td>Step-up transformer</td><td>Electrical control building</td></tr><tr><td>Switchyard</td><td>Switchyard control building</td></tr><tr><td>Busses</td><td>Transmission pole/tower</td></tr><tr><td>Surge arrestors</td><td>Grounding system</td></tr><tr><td>Disconnects</td><td></td></tr></table>	Breakers	Take-off facilities	Step-up transformer	Electrical control building	Switchyard	Switchyard control building	Busses	Transmission pole/tower	Surge arrestors	Grounding system	Disconnects		CEC
Breakers	Take-off facilities													
Step-up transformer	Electrical control building													
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## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>TRANSMISSION SYSTEM ENGINEERING (cont.)</b>		
<p><b>TSE-2, Engineer Assignments:</b> Before the start of construction, the project owner shall assign to the project an electrical engineer and at least one of each of the following:</p> <ul style="list-style-type: none"> <li>a) a civil engineer;</li> <li>b) a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering;</li> <li>c) a design engineer who is either a structural engineer or a civil engineer and fully competent and proficient in the design of power plant structures and equipment supports; or</li> <li>d) a mechanical engineer (Business and Professions Code Sections 6704 et seq. require state registration to practice as either a civil engineer or a structural engineer in California).</li> </ul> <p>The tasks performed by the civil, mechanical, electrical, or design engineers may be divided between two or more engineers as long as each engineer is responsible for a particular segment of the project, e.g., proposed earthwork, civil structures, power plant structures, or equipment support. No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer. The civil, geotechnical, or civil and design engineer, assigned as required by Facility Design Condition GEN 5, may be responsible for design and review of the TSE facilities.</p> <p>The project owner shall submit to the CBO, for review and approval, the names, qualifications, and registration numbers of all engineers assigned to the project. If any one of the designated engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer. This engineer shall be authorized to halt earth work and require changes; if site conditions are unsafe or do not conform to the predicted conditions used as the basis for design of earth work or foundations.</p> <p>The electrical engineer shall:</p> <ul style="list-style-type: none"> <li>1. be responsible for the electrical design of the power plant switchyard, outlet, and termination facilities; and</li> <li>2. sign and stamp electrical design drawings, plans, specifications, and calculations.</li> </ul>	<p>Prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, the names, qualifications, and registration numbers of all the responsible engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the engineers within five days of the approval.</p> <p>If the designated responsible engineer is subsequently reassigned or replaced, the project owner has 5 days in which to submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within 5 days of the approval.</p>	CEC
<p><b>TSE-3, Design and/or Construction Discrepancies:</b> If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend corrective action (2001 California Building Code, Chapter 1, section 108.4, approval required; Chapter 17, section 1701.3, Duties and Responsibilities of the Special Inspector; Appendix Chapter 33, section 3317.7, Notification of Noncompliance). The discrepancy documentation shall become a controlled document and shall be submitted to the CBO for review and approval and refer to this condition of certification.</p>	<p>The project owner shall submit a copy of the CBO's approval or disapproval of any corrective action taken to resolve a discrepancy to the CPM within 15 days of receipt. If disapproved, the project owner shall advise the CPM, within 5 days, the reason for the disapproval, along with the revised corrective action required to obtain the CBO's approval.</p>	CEC
<p><b>TSE-4, Power Plan Switchyard/Outlet Line and Termination Plans:</b> For the power plant switchyard, outlet line and termination, the project owner shall not begin any construction until plans for that increment of construction have been approved by the CBO. These plans, together with design changes and design change notices, shall remain on the site for one year after completion of construction. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS. The following activities shall be reported in the monthly compliance report:</p>	<p>Prior to the start of each increment of construction, the project owner shall submit to the CBO for review and approval the final design plans, specifications and calculations for equipment and systems of the power plant switchyard, and outlet line and termination, including a copy of the signed and stamped statement from the responsible</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>TRANSMISSION SYSTEM ENGINEERING (cont.)</b>		
a) receipt or delay of major electrical equipment; b) testing or energization of major electrical equipment; and c) the number of electrical drawings approved, submitted for approval, and still to be submitted.	electrical engineer verifying compliance with all applicable LORS, and send the CPM a copy of the transmittal letter in the next monthly compliance report.	
<p><b>TSE-5, LORS and Requirements for Transmission Facilities:</b> The project owner shall ensure that the design, construction, and operation of the proposed transmission facilities will conform to all applicable LORS, and the requirements listed below. The project owner shall submit the required number of copies of the design drawings and calculations, as determined by the CBO. Once approved, the project owner shall inform the CPM and CBO of any anticipated changes to the design, and shall submit a detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change to the CPM and CBO for review and approval.</p> <p>a) The power plant outlet line shall meet or exceed the electrical, mechanical, civil, and structural requirements of CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the High Voltage Electric Safety Orders, California ISO standards, National Electric Code (NEC) and related industry standards.</p> <p>b) Breakers and busses in the power plant switchyard and other switchyards, where applicable, shall be sized to comply with a short-circuit analysis.</p> <p>c) Outlet line crossings and line parallels with transmission and distribution facilities shall be coordinated with the transmission line owner and comply with the owner's standards.</p> <p>d) The project conductors shall be sized to accommodate the full output of the project.</p> <p>e) Termination facilities shall comply with applicable SCE interconnection standards.</p> <p>f) The project owner shall provide to the CPM:</p> <p>i) The Special Protection System (SPS) sequencing and timing if applicable,</p> <p>ii) A letter stating that the mitigation measures or projects selected by the transmission owners for each reliability criteria violation, for which the project is responsible, are acceptable, and</p> <p>iv) A copy of the executed LGIA signed by the California ISO and the project owner.</p>	<p>Prior to the start of construction or start of modification of transmission facilities, the project owner shall submit to the CBO for approval:</p> <ol style="list-style-type: none"> <li>Design drawings, specifications, and calculations conforming with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the High Voltage Electric Safety Orders, CA ISO standards, National Electric Code (NEC) and related industry standards, for the poles/towers, foundations, anchor bolts, conductors, grounding systems, and major switchyard equipment;</li> <li>For each element of the transmission facilities identified above, the submittal package to the CBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions" and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the transmission element(s) will conform with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the High Voltage Electric Safety Orders, California ISO standards, National Electric Code (NEC), and related industry standards;</li> <li>Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in charge, a route map, and an engineering description of the equipment and configurations covered by requirements TSE 5 a) through g);</li> <li>The Special Protection System (SPS) sequencing and timing if applicable shall be provided concurrently to the CPM.</li> <li>A letter stating that the mitigation measures or projects selected by the transmission owners for each reliability criteria violation, for which the project is responsible, are acceptable, and</li> </ol>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
TRANSMISSION SYSTEM ENGINEERING (cont.)		
	<p>6. A copy of the executed LGIA signed by the California ISO and the project owner.</p> <p>Prior to the start of construction of or modification of transmission facilities, the project owner shall inform the CBO and the CPM of any anticipated changes to the design that are different from the design previously submitted and approved and shall submit a detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change to the CPM and CBO for review and approval.</p>	
<p><b>TSE-6, Notice to the California Independent Systems Officer:</b> The project owner shall provide the following Notice to the California Independent System Operator (California ISO) prior to synchronizing the facility with the California Transmission system:</p> <ol style="list-style-type: none"> <li>1. At least one week prior to synchronizing the facility with the grid for testing, provide the California ISO a letter stating the proposed date of synchronization; and</li> <li>2. At least one business day prior to synchronizing the facility with the grid for testing, provide telephone notification to the California ISO Outage Coordination Department.</li> </ol>	<p>The project owner shall provide copies of the California ISO letter to the CPM when it is sent to the California ISO one week prior to initial synchronization with the grid. The project owner shall contact the California ISO Outage Coordination Department, Monday through Friday, between the hours of 0700 and 1530 at (916) 351 2300 at least one business day prior to synchronizing the facility with the grid for testing. A report of conversation with the California ISO shall be provided electronically to the CPM one day before synchronizing the facility with the California transmission system for the first time.</p>	CEC
<p><b>TSE-7, Transmission Facility Inspection:</b> The project owner shall be responsible for the inspection of the transmission facilities during and after project construction, and any subsequent CPM and CBO approved changes thereto, to ensure conformance with CPUC GO 95 or NESC, Title 8, CCR, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders", applicable interconnection standards, NEC and related industry standards. In case of non-conformance, the project owner shall inform the CPM and CBO in writing, within 10 days of discovering such non-conformance and describe the corrective actions to be taken.</p>	<p>Within 60 days after first synchronization of the project, the project owner shall transmit to the CPM and CBO:</p> <ol style="list-style-type: none"> <li>1 "As built" engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in responsible charge. A statement attesting to conformance with CPUC GO 95 or NESC, Title 8, California Code of Regulations, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders", and applicable interconnection standards, NEC, related industry standards.</li> <li>2. An "as built" engineering description of the mechanical, structural, and civil portion of the transmission facilities signed and sealed by the registered engineer in responsible charge or acceptable alternative verification. "As built" drawings of the electrical, mechanical, structural, and civil portion of the transmission facilities shall be maintained at the power plant and made available, if requested, for CPM audit as set forth in the "Compliance Monitoring Plan".</li> </ol>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
TRANSMISSION SYSTEM ENGINEERING (cont.)		
	3. A summary of inspections of the completed transmission facilities, and identification of any nonconforming work and corrective actions taken, signed and sealed by the registered engineer in charge.	
AIR QUALITY		
<b>AQ-SC-1, Air Quality Construction Mitigation Manager (AQCMM):</b> The project owner shall designate and retain an on-site AQCMM who shall be responsible for directing and documenting compliance with Conditions of Certification AQ SC3, AQ SC4 and AQ SC5 for the entire project site and linear facility construction. The on-site AQCMM may delegate responsibilities to one or more AQCMM Delegates. The AQCMM and AQCMM Delegates shall have full access to all areas of construction on the project site and linear facilities, and shall have the authority to stop any or all construction activities as warranted by applicable construction mitigation conditions. The AQCMM and AQCMM Delegates may have other responsibilities in addition to those described in this condition. The AQCMM shall not be terminated without written consent of the Compliance Project Manager (CPM).	At least 60 days prior to the start of ground disturbance, the project owner shall submit to the BLM's Authorized Officer and CPM for approval, the name, resume, qualifications, and contact information for the on-site AQCMM and all AQCMM Delegates.	CEC
<b>AQ-SC-2, Air Quality Construction Mitigation Plan (AQCMP):</b> The project owner shall provide an AQCMP, for approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with Conditions of Certification AQ SC3, AQ SC4, and AQ SC5.	At least 30 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the BLM's Authorized Officer and CPM for approval. The AQCMP shall include effectiveness and environmental data for the proposed soil stabilizer. The BLM's Authorized Officer or CPM will notify the project owner of any necessary modifications to the plan within 15 days from the date of receipt.	CEC
<b>AQ-SC-3, Construction Fugitive Dust Control:</b> The AQCMM shall submit documentation to the BLM's Authorized Officer and CPM in each Monthly Compliance Report that demonstrates compliance with the Air Quality Construction Mitigation Plan (AQCMP) mitigation measures for the purposes of minimizing fugitive dust emission creation from construction activities and preventing all fugitive dust plumes from leaving the project. Any deviation from the AQCMP mitigation measures shall require prior BLM Authorized Officer and CPM notification and approval.  a. The main access roads through the facility to the power block areas will be either paved or stabilized using soil binders, or equivalent methods, to provide a stabilized surface that is similar for the purposes of dust control to paving, that may or may not include a crushed rock (gravel or similar material with fines removed) top layer, prior to initiating construction in the main power block area, and delivery areas for operations materials (chemicals, replacement parts, etc.) will be paved or treated prior to taking initial deliveries.  b. All unpaved construction roads and unpaved operation and maintenance site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent that can be determined to be both as efficient or more efficient for fugitive dust control as ARB approved soil stabilizers, and shall not increase any other environmental impacts, including loss of vegetation to areas beyond where the soil stabilizers are being applied for dust control. All other disturbed areas in the project and linear construction sites shall be watered as frequently as necessary during grading (consistent with <b>Biology</b> Conditions of Certification that address the minimization of standing water); and after	The AQCMM shall provide the CPM a Monthly Compliance Report to include the following to demonstrate control of fugitive dust emissions:  A. a summary of all actions taken to maintain compliance with this Condition;  B. copies of any complaints filed with the District in relation to project construction; and  C. any other documentation deemed necessary by the CPM or AQCMM to verify compliance with this Condition. Such information may be provided via electronic format or disk at the project owner's discretion.	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>AIR QUALITY (cont.)</b>		
<p>active construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods, in order to comply with the dust mitigation objectives of Condition of Certification <b>AQ-SC4</b>. The frequency of watering can be reduced or eliminated during periods of precipitation.</p> <p>c. No vehicle shall exceed 10 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.</p> <p>d. Visible speed limit signs shall be posted at the construction site entrances.</p> <p>e. All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.</p> <p>f. Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.</p> <p>g. All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.</p> <p>h. All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.</p> <p>i. Construction areas adjacent to any paved roadway below the grade of the surrounding construction area or otherwise directly impacted by sediment from site drainage shall be provided with sandbags or other equivalently effective measures to prevent run-off to roadways, or other similar run-off control measures as specified in the Storm Water Pollution Prevention Plan (SWPPP), only when such SWPPP measures are necessary so that this Condition does not conflict with the requirements of the SWPPP.</p> <p>j. All paved roads within the construction site shall be swept daily or as needed (less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.</p> <p>k. At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads en route from the construction site or construction staging areas shall be swept as needed (less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff resulting from the construction site activities is visible on the public paved roadways.</p> <p>l. All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds.</p> <p>m. All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.</p> <p>n. Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this Condition shall remain in place until the soil is stabilized or permanently covered with vegetation.</p>		

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>AIR QUALITY (cont.)</b>		
<p><b>AQ-SC-4, Dust Plume Response Requirement:</b> The AQCMM or an AQCMM Delegate shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (A) off the project site and within 400 feet upwind of any regularly occupied structures not owned by the project owner or (B) 200 feet beyond the centerline of the construction of linear facilities indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMP shall include a section detailing how the additional mitigation measures will be accomplished within the time limits specified. The AQCMM or Delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed:</p> <p>Step 1: The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.</p> <p>Step 2: The AQCMM or Delegate shall direct implementation of additional methods of dust suppression if Step 1, specified above, fails to result in adequate mitigation within 30 minutes of the original determination.</p> <p>Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if Step 2, specified above, fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The owner/operator may appeal to the CPM or BLM Authorized Officer any directive from the AQCMM or Delegate to shut down an activity, if the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM or BLM Authorized Officer before that time.</p>	<p>The AQCMM shall provide the BLM's Authorized Officer and the CPM a Monthly Compliance Report (<b>COMPLIANCE-6</b>) to include:</p> <p>A. a summary of all actions taken to maintain compliance with this condition;</p> <p>B. copies of any complaints filed with the District in relation to project construction; and</p> <p>C. any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.</p>	CEC
<p><b>AQ-SC-5, Diesel-Fueled Engine Control:</b> The AQCMM shall submit to the CPM, in the Monthly Compliance Report, a construction mitigation report that demonstrates compliance with the AQCMP mitigation measures for purposes of controlling diesel construction-related emissions. Any deviation from the AQCMP mitigation measures shall require prior and CPM notification and approval.</p> <p>a. All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM showing that the engine meets the Conditions set forth herein.</p> <p>b. All construction diesel engines with a rating of 50 hp or higher shall meet, at a minimum, the Tier 3 California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, Title 13, section 2423(b)(1), unless a good faith effort to the satisfaction of the CPM that is certified by the on-site AQCMM demonstrates that such engine is not available for a particular item of equipment. In the event that a Tier 3 engine is not available for any off-road equipment larger than 100 hp, that equipment shall be equipped with a Tier 2 engine, or an engine that is equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 2 levels unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this Condition, the use of such devices is "not practical" for the following, as well as other, reasons.</p> <ol style="list-style-type: none"> <li>1. There is no available retrofit control device that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency to control the engine in question to Tier 2 equivalent emission levels and the highest level of available control using retrofit or Tier 1 engines is being used for the engine in question; or</li> <li>2. The construction equipment is intended to be on site for 10 days or less.</li> <li>3. The CPM may grant relief from this requirement if the AQCMM can demonstrate a good faith effort to comply with this requirement and that compliance is not practical.</li> </ol>	<p>The AQCMM shall include in the Monthly Compliance Report the following to demonstrate control of diesel construction-related emissions:</p> <p>A. A summary of all actions taken to control diesel construction related emissions;</p> <p>B. A list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has been properly maintained; and heavy earth-moving equipment and heavy duty construction-</p> <p>C. Any other documentation deemed necessary by the CPM, and the AQCMM to verify compliance with this Condition. Such information may be provided via electronic format or disk at the project owner's discretion.</p>	CEC

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>AIR QUALITY (cont.)</b>		
<p>c. The use of a retrofit control device may be terminated immediately, provided that the CPM is informed within 10 working days of the termination and that a replacement for the equipment item in question meeting the controls required in item "b" occurs within 10 days of termination of the use, if the equipment would be needed to continue working at this site for more than 15 days after the use of the retrofit control device is terminated, if one of the following Conditions exists:</p> <ol style="list-style-type: none"> <li>1. The use of the retrofit control device is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in back pressure.</li> <li>2. The retrofit control device is causing or is reasonably expected to cause engine damage.</li> <li>3. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public.</li> <li>4. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination.</li> </ol> <p>d. All related trucks with engines meeting the requirements of (b) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.</p> <p>e. All diesel heavy construction equipment shall not idle for more than five minutes. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement.</p> <p>f. Construction equipment will employ electric motors when feasible.</p>		
<p><b>AQ-SC-6, Emission Standards Vehicles:</b> The project owner, when obtaining dedicated on-road or off-road vehicles for mirror washing activities and other facility maintenance activities, shall only obtain new model year vehicles that meet California on-road vehicle emission standards or appropriate U.S.EPA/California off-road engine emission standards for the model year when obtained.</p>	<p>At least 30 days prior to the start commercial operation, the project owner shall submit to the CPM a copy of the plan that identifies the size and type of the on-site vehicle and equipment fleet and the vehicle and equipment purchase orders and contracts and/or purchase schedule. The plan shall be updated every other year and submitted in the Annual Compliance Report.</p>	CEC
<p><b>AQ-SC-7, Operation Dust Control Plan:</b> The project owner shall provide a site Operations Dust Control Plan, including all applicable fugitive dust control measures identified in the verification of AQ SC3 that would be applicable to minimizing fugitive dust emission creation from operation and maintenance activities and preventing all fugitive dust plumes from leaving the project site that:</p> <ol style="list-style-type: none"> <li>A. describes the active operations and wind erosion control techniques such as windbreaks and chemical dust suppressants, including their ongoing maintenance procedures, that shall be used on areas that could be disturbed by vehicles or wind anywhere within the project boundaries; and</li> <li>B. identifies the location of signs throughout the facility that will limit traveling on unpaved portion of roadways to solar equipment maintenance vehicles only. In addition, vehicle speed shall be limited to no more than 10 miles per hour on these unpaved roadways, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.</li> </ol>	<p>At least 30 days prior to start of commercial operation, the project owner shall submit to the CPM for review and approval a copy of the site Operations Dust Control Plan that identifies the dust and erosion control procedures, including effectiveness and environmental data for the proposed soil stabilizer, that will be used during operation of the project and that identifies all locations of the speed limit signs. Within 60 days after commercial operation, the project owner shall provide to the CPM a report identifying the locations of all speed limit signs, and a copy of the project employee and contractor training manual that clearly identifies that project employees and contractors are required to comply with the dust and erosion control procedures and on-site speed limits.</p>	CEC



## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>AIR QUALITY (cont.)</b>		
<p>The site operations fugitive dust control plan shall include the use of durable non-toxic soil stabilizers on all regularly used unpaved roads and disturbed off-road areas, or alternative methods for stabilizing disturbed off-road areas, within the project boundaries, and shall include the inspection and maintenance procedures that will be undertaken to ensure that the unpaved roads remain stabilized. The soil stabilizer used shall be a non-toxic soil stabilizer or soil weighting agent that can be determined to be as efficient as or more efficient for fugitive dust control than ARB approved soil stabilizers, and that shall not increase any other environmental impacts including loss of vegetation to areas beyond where the soil stabilizers are being applied for dust control.</p> <p>The performance and application of the fugitive dust controls shall also be measured against and meet the performance requirements of condition AQ-SC4. The measures and performance requirements of AQ-SC4 shall also be included in the operations dust control plan.</p>		
<p><b>AQ-SC-8, CPM Copies of Documents:</b> The project owner shall provide the CPM copies of all District issued Authority-to-Construct (ATC) and Permit-to-Operate (PTO) documents for the facility.</p> <p>The project owner shall submit to the CPM for review and approval any modification proposed by the project owner to any project air permit. The project owner shall submit to the CPM any modification to any permit proposed by the District or U.S. Environmental Protection Agency (U.S. EPA), and any revised permit issued by the District or U.S. EPA, for the project.</p>	<p>The project owner shall submit any ATC, PTO, and proposed air permit modifications to the CPM within 5five working days of its submittal either by 1) the project owner to an agency, or 2) receipt of proposed modifications from an agency. The project owner shall submit all modified air permits to the CPM within 15 days of receipt.</p>	CEC
<p><b>AQ-SC-9, VOC Emission Reduction Credit (ERC) Sources:</b> The project owner shall provide a list of the proposed VOC emission reduction credit (ERC) sources that total at least 68 pounds per day, shall submit requests to modify this list, and shall submit documentation confirming that the ERCs have been surrendered as required by South Coast Air Quality Management District rules.</p>	<p>The project owner shall provide to the CPM the following:</p> <ul style="list-style-type: none"> <li>A. The list of proposed emission reduction credit sources, with the amount of reduction, the location of reduction, the method of reduction and date of reduction prior to initiating construction.</li> <li>B. Documentation prior to the start of operation that demonstrates the emission reduction credits have been surrendered in a manner and timeframe that complies with district rules.</li> <li>C. Any requests to modify the list of emission reduction credits shall be provided no later than at least 30 days prior to their surrender.</li> </ul>	CEC
<p><b>AQ-SC-10, Water Quality and Annual Emissions:</b> The project owner shall operate the cooling towers with high efficiency mist eliminators and shall determine and report water quality and annual emissions.</p>	<p>The project owner shall provide the following at least 30 days prior to installation of the cooling tower to the CPM for review and approval:</p> <ul style="list-style-type: none"> <li>A. The manufacturer specifications for the cooling tower, that provides the number of cells and design recirculating water flow rate for the two cooling towers.</li> <li>B. The manufacturer specifications for the mist eliminators that provide a manufacturer guarantee that the mist eliminators will reduce drift to no more than 0.0005% of recirculating water flow.</li> </ul>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>AIR QUALITY (cont.)</b>		
	<p>The project owner shall provide the following in the Annual Compliance Reports:</p> <p>C. The sampling data for the recirculating water TDS concentration, performed at least quarterly, that demonstrates that the annual average TDS concentration was no more than 2,000 milligrams per liter (ppmw). D. The estimated annual particulate emissions from the cooling tower using the following equation: (annual gallons of water recirculated) x (0.000005 fraction mist) x (average annual TDS concentration in mg/l) / (1,000,000) x (8.34 lbs/gallon).</p>	
<p><b>AQ-SC-11, Assurance that Engine Operation will not Cause Exceedance of Ambient Air Quality Standards:</b> The project owner shall use one of the following four options to assure that the operation of the emergency engines will not cause an exceedance of the state or federal 1-hour NO<sub>2</sub> ambient air quality standards:</p> <ol style="list-style-type: none"> <li>1) The project owner shall provide an air dispersion modeling analysis that demonstrates to Staff's satisfaction that the currently proposed or officially revised worst-case operating emissions would not have the potential to cause exceedances of the state or federal 1-hour NO<sub>2</sub> ambient air quality standards, or</li> <li>2) The project owner shall procure emergency generator engines that meet ARB Tier 4 standards for NO<sub>x</sub> emissions (0.5 grams per brake horsepower), or</li> <li>3) In the event that Tier 4 engines are not available at the time of engine purchase, the project owner shall; a) provide documentation from engine manufacturers that Tier 4 engines are not available; and b) procure emergency engines that have a NO<sub>x</sub> emissions guarantee of no more than 2.6 grams per brake horsepower, or</li> <li>4) The project owner shall agree to limit the emergency generator engine testing duration to no more than 30 minutes per event and a testing frequency limited to the minimum required by engine manufacturer.</li> </ol> <p>In no event shall the project owner propose the use of an emergency engine that does not meet the most strict applicable federal or state engine emission limit regulation without a signed waiver from U.S. EPA or ARB as appropriate. The project owner shall justify the date of engine purchase.</p>	<p>The project owner shall provide to the CPM the air dispersion modeling analysis, if performed, that demonstrates compliance with Part 1) of this Condition at least 30 days prior to purchasing the emergency engine generators for this project, or shall provide documentation to the CPM at least five days prior to purchasing the engine generators that demonstrates how they would comply with Part 2), or Part 3), or Part 4) of this Condition.</p>	CEC
<b>BIOLOGICAL RESOURCES</b>		
<p><b>BIO-1, Designated Biologist Selection and Qualifications:</b> The Project owner shall assign at least one Designated Biologist to the Project. The Project owner shall submit the resume of the proposed Designated Biologist(s), with at least three references and contact information, to the Energy Commission Compliance Project Manager (CPM) and BLM's Authorized Officer for approval in consultation with CDFG and USFWS.</p> <p>The Designated Biologist must meet the following minimum qualifications:</p> <ol style="list-style-type: none"> <li>1. Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;</li> <li>2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society;</li> </ol>	<p>At least 30 days prior to construction-related ground disturbance, the Project owner shall submit the resumes of the Designated Biologists(s) along with the completed USFWS Desert Tortoise Authorized Biologist Request Form (<a href="http://www.fws.gov/ventura/speciesinfo/protocols_guidelines">www.fws.gov/ventura/speciesinfo/protocols_guidelines</a>) and submit it to the USFWS and the CPM for review and final approval.</p> <p>No construction-related ground disturbance, grading, boring, or trenching shall commence until an approved Designated Biologist is available to be on site.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>3. Have at least one year of field experience with biological resources found in or near the Project area;</p> <p>4. Meet the current USFWS Authorized Biologist qualifications criteria (<a href="http://www.fws.gov/ventura/speciesinfo/protocols_guidelines">www.fws.gov/ventura/speciesinfo/protocols_guidelines</a>), demonstrate familiarity with protocols and guidelines for the desert tortoise, and be approved by the USFWS; and</p> <p>5. Possess a California ESA Memorandum of Understanding pursuant to Section 2081(a) for desert tortoise.</p> <p>In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM, in consultation with CDFG and USFWS, that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the conditions of certification.</p>	<p>If a Designated Biologist needs to be replaced, the specified information of the proposed replacement must be submitted to the CPM at least 10 working days prior to the termination or release of the preceding Designated Biologist. In an emergency, the Project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Biologist is proposed to the CPM for consideration.</p>	
<p><b>BIO-2, Designated Biologist Duties:</b> The Project owner shall ensure that the Designated Biologist performs the activities described below during any site mobilization activities, construction-related ground disturbance, grading, boring or trenching activities. The Designated Biologist may be assisted by the approved Biological Monitor(s) but remains the contact for the Project owner, BLM's Authorized Officer and the CPM. The Designated Biologist Duties shall include the following:</p> <ol style="list-style-type: none"> <li>1. Advise the Project owner's Construction and Operation Managers on the implementation of the biological resources conditions of certification;</li> <li>2. Consult on the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) to be submitted by the Project owner;</li> <li>3. Be available to supervise, conduct and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special-status species or their habitat;</li> <li>4. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;</li> <li>5. Inspect active construction areas where animals may have become trapped prior to construction commencing each day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (e.g., parking lots) for animals in harm's way;</li> <li>6. Notify the Project owner and BLM's Authorized Officer and the CPM of any non-compliance with any biological resources condition of certification;</li> <li>7. Respond directly to inquiries of BLM's Authorized Officer and the CPM regarding biological resource issues;</li> <li>8. Maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Report and the Annual Compliance Report;</li> <li>9. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training, and USFWS guidelines on desert tortoise surveys and handling procedures &lt;<a href="http://www.fws.gov/ventura/speciesinfo/protocols_guidelines">www.fws.gov/ventura/speciesinfo/protocols_guidelines</a>&gt;; and</li> <li>10. Maintain the ability to be in regular, direct communication with representatives of CDFG, USFWS, BLM's Authorized Officer and the CPM, including notifying these agencies of dead or injured listed species and reporting special-status species observations to the California Natural Diversity Data Base.</li> </ol>	<p>The Designated Biologist shall provide copies of all written reports and summaries that document biological resources compliance activities in the Monthly Compliance Reports submitted to the CPM. If actions may affect biological resources during operation a Designated Biologist shall be available for monitoring and reporting. During Project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless his or her duties cease, as approved by the CPM.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p><b>BIO-3, Biological Monitor Selection and Qualification:</b> The Designated Biologist shall submit the resume, at least three references, and contact information of the proposed Biological Monitors to BLM's Authorized Officer and the CPM. The resume shall demonstrate, to the satisfaction of the CPM, the appropriate education and experience to accomplish the assigned biological resource tasks. The Biological Monitor is the equivalent of the USFWS designated Desert Tortoise Monitor (USFWS 2008).</p> <p>Biological Monitor(s) training by the Designated Biologist shall include familiarity with the conditions of certification, BRMIMP, WEAP, and USFWS guidelines on desert tortoise surveys and handling procedures &lt;www.fws.gov/ventura/speciesinfo/protocols_guidelines&gt;.</p>	<p>The Project owner shall submit the specified information to the CPM for approval at least 30 days prior to the start of any site mobilization or construction-related ground disturbance, grading, boring, and trenching. The Designated Biologist shall submit a written statement to the CPM confirming that individual Biological Monitor(s) has been trained including the date when training was completed. If additional biological monitors are needed during construction the specified information shall be submitted to the CPM for approval at least 10 days prior to their first day of monitoring activities.</p>	CEC
<p><b>BIO-4, Biological Monitor Duties:</b> The Biological Monitors shall assist the Designated Biologist in conducting surveys and in monitoring of site mobilization activities, construction-related ground disturbance, fencing, grading, boring, trenching, or reporting. The Designated Biologist shall remain the contact for the Project owner and the CPM.</p>	<p>The Designated Biologist shall submit in the Monthly Compliance Report to the CPM copies of all written reports and summaries that document biological resources compliance activities, including those conducted by Biological Monitors. If actions may affect biological resources during operation a Biological Monitor, under the supervision of the Designated Biologist, shall be available for monitoring and reporting.</p>	CEC
<p><b>BIO-5, Designated Biologist and Biological Monitor Authority:</b> The Project owner's construction/operation manager shall act on the advice of the Designated Biologist and Biological Monitor(s) to ensure conformance with the biological resources conditions of certification. The Designated Biologist shall have the authority to immediately stop any activity that is not in compliance with these conditions and/or order any reasonable measure to avoid take of an individual of a listed species. If required by the Designated Biologist and Biological Monitor(s) the Project owner's construction/operation manager shall halt all site mobilization, ground disturbance, grading, boring, trenching and operation activities in areas specified by the Designated Biologist. The Designated Biologist shall:</p> <ol style="list-style-type: none"> <li>1. Require a halt to all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued;</li> <li>2. Inform the Project owner and the construction/operation manager when to resume activities; and</li> <li>3. Notify BLM's Authorized Officer and the CPM if there is a halt of any activities and advise them of any corrective actions that have been taken or would be instituted as a result of the work stoppage.</li> </ol> <p>If the Designated Biologist is unavailable for direct consultation, the Biological Monitor shall act on behalf of the Designated Biologist.</p>	<p>The Project owner shall ensure that the Designated Biologist or Biological Monitor notifies the CPM and BLM immediately (and no later than the morning following the incident, or Monday morning in the case of a weekend) of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, or operation activities. If the non-compliance or halt to construction or operation relates to desert tortoise or any other federal- or state- listed species, the Project owner shall also notify Carlsbad Office of the USFWS and the Ontario Office of the CDFG at the same time. The Project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem.</p> <p>Whenever corrective action is taken by the Project owner, a determination of success or failure will be made by the CPM in consultation with BLM, USFWS and CDFG within 5 working days after receipt of notice that corrective action is completed, or the Project owner would be notified by the CPM that coordination with other agencies would require additional time before a determination can be made.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p><b>BIO-6, Worker Environmental Awareness Program (WEAP):</b> The Project owner shall develop and implement a Project-specific Worker Environmental Awareness Program (WEAP) and shall secure approval for the WEAP from BLM's Authorized Officer and the CPM. The WEAP shall be administered to all onsite personnel including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, subcontractors, and delivery personnel. The WEAP shall be implemented during site preconstruction, construction, operation, and closure. The WEAP shall:</p> <ol style="list-style-type: none"> <li>1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written material and electronic media, including photographs of protected species, is made available to all participants;</li> <li>2. Discuss the locations and types of sensitive biological resources on the Project site and adjacent areas, and explain the reasons for protecting these resources; provide information to participants that no snakes, reptiles, or other wildlife shall be harmed;</li> <li>3. Place special emphasis on desert tortoise, including information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures;</li> <li>4. Include a discussion of fire prevention measures to be implemented by workers during Project activities; request workers dispose of cigarettes and cigars appropriately and not leave them on the ground or buried;</li> <li>5. Describe the temporary and permanent habitat protection measures to be implemented at the Project site;</li> <li>6. Identify whom to contact if there are further comments and questions about the material discussed in the program; and</li> <li>7. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.</li> </ol> <p>The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.</p>	<p>At least 30 days prior to start of construction-related ground disturbance, the Project owner shall provide to the CPM for review and approval and to BLM, USFWS and CDFG a copy of the final WEAP and all supporting written materials and electronic media prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program.</p> <p>The Project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. At least 10 days prior to construction-related ground disturbance activities the Project owner shall submit two copies of the approved final WEAP.</p> <p>Training acknowledgement forms signed during construction shall be kept on file by the Project owner for at least 6 months after the start of commercial operation.</p> <p>Throughout the life of the Project, the WEAP shall be repeated annually for permanent employees, and shall be routinely administered within 1 week of arrival to any new construction personnel, foremen, contractors, subcontractors, and other personnel potentially working within the Project area. Upon completion of the orientation, employees shall sign a form stating that they attended the program and understand all protection measures. These forms shall be maintained by the Project owner and shall be made available to the CPM, BLM, USFWS and CDFG and upon request. Workers shall receive and be required to visibly display a hardhat sticker or certificate that they have completed the training.</p> <p>During Project operation, signed statements for operational personnel shall be kept on file for 6 months following the termination of an individual's employment.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p><b>BIO-7, Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP):</b> The Project owner shall develop a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), and shall submit two copies of the proposed BRMIMP to the BLM-Authorized Officer and the CPM for review and approval. The Project owner shall implement the measures identified in the approved BRMIMP. The BRMIMP shall incorporate avoidance and minimization measures described in final versions of the Desert Tortoise Relocation Translocation Plan, the Raven Management Plan, the Closure, Conceptual Restoration Plan, the Burrowing Owl Mitigation and Monitoring Plan, and the Weed Management Plan.</p> <p>The BRMIMP shall be prepared in consultation with the Designated Biologist and shall include accurate and up-to-date maps depicting the location of sensitive biological resources that require temporary or permanent protection during construction and operation. The BRMIMP shall include complete and detailed descriptions of the following:</p> <ol style="list-style-type: none"> <li>1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the Project owner;</li> <li>2. All biological resources conditions of certification identified as necessary to avoid or mitigate impacts;</li> <li>3. All biological resource mitigation, monitoring and compliance measures required in federal agency terms and conditions, such as those provided in the USFWS Biological Opinion;</li> <li>4. All sensitive biological resources to be impacted, avoided, or mitigated by Project construction, operation, and closure;</li> <li>5. All required mitigation measures for each sensitive biological resource;</li> <li>6. All measures that shall be taken to avoid or mitigate temporary disturbances from construction activities;</li> <li>7. Duration for each type of monitoring and a description of monitoring methodologies and frequency;</li> <li>8. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;</li> <li>9. All performance standards and remedial measures to be implemented if performance standards are not met;</li> <li>10. Biological resources-related facility closure measures including a description of funding mechanism(s);</li> <li>11. A process for proposing plan modifications to BLM's Authorized Officer and the CPM and appropriate agencies for review and approval; and</li> <li>12. A requirement to submit any sightings of any special-status species that are observed on or in proximity to the Project site, or during Project surveys, to the California Natural Diversity Data Base (CNDDB) per CDFG requirements.</li> </ol>	<p>The Project owner shall submit the draft BRMIMP to the CPM and BLM at least 30 days prior to start of any preconstruction site mobilization and construction-related ground disturbance, grading, boring, and trenching. At the same time the Project owner shall provide to CDFG and USFWS a copy of all portions of the draft BRMIMP relating to desert tortoise and any other federal or state-listed species. The Project owner shall provide final BRMIMP to the CPM, BLM, CDFG and USFWS at least 7 days prior to start of any construction-related ground disturbance, grading, boring, and trenching. The BRMIMP shall contain all of the required measures included in all biological conditions of certification. No construction-related ground disturbance, grading, boring, or trenching may occur prior to approval of the final BRMIMP by the CPM and BLM.</p> <p>If any permits have not yet been received when the final BRMIMP is submitted, these permits shall be submitted to the CPM within 5 days of their receipt, and the BRMIMP shall be revised or supplemented to reflect the permit condition(s). The Project owner shall submit to the CPM and BLM the revised or supplemented BRMIMP within 10 days following the Project owner's receipt of any additional permits. Under no circumstances shall ground disturbance proceed without implementation of all permit conditions.</p> <p>To verify that the extent of construction disturbance does not exceed that described in these conditions, the Project owner shall submit aerial photographs, at an approved scale, taken before and after construction to the CPM, BLM, USFWS and CDFG. The first set of aerial photographs shall reflect site conditions prior to any preconstruction site mobilization and construction-related ground disturbance, grading, boring, and trenching, and shall be submitted prior to initiation of such activities. The second set of aerial photographs shall be taken subsequent to completion of construction, and shall be submitted to the CPM, BLM, USFWS and CDFG no later than 90 days after completion of construction. The Project owner shall also provide a final accounting in whole acres of vegetation communities/cover types present before and after construction. Construction acreages shall be rounded to the nearest acre.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
	<p>Any changes to the approved BRMIMP must be approved by the CPM and BLM in consultation with CDFG and USFWS.</p> <p>Implementation of BRMIMP measures (for example, construction activities that were monitored, species observed) shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of Project construction, the Project owner shall provide to the CPM, for review and approval, a written construction termination report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the Project's preconstruction site mobilization and construction-related ground disturbance, grading, boring, and trenching, and which mitigation and monitoring items are still outstanding.</p>	
<p><b>Bio-8, Impact Avoidance and Minimization Measures:</b> The Project owner shall undertake the following measures to manage the Project site and related facilities during construction, operation and maintenance in a manner to avoid or minimize impacts to biological resources:</p> <ol style="list-style-type: none"> <li>1. Limit Disturbance Areas. Minimize soil disturbance by locating staging areas, laydowns, and temporary parking or storage for linears in existing disturbed areas. Equipment maintenance and refueling shall not be conducted within 100 feet of any sensitive resource (for example, waters of the state, desert dry wash woodland, dune habitats and rare plant populations). Limit the width of the work area near sensitive resources. Avoid blading temporary access roads where feasible and instead drive over and crush the vegetation to preserve the seed bank and biotic soil crusts. The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of spoils) shall be delineated with stakes and flagging prior to construction activities in consultation with the Designated Biologist. Spoils and topsoil shall be stockpiled in disturbed areas lacking native vegetation and which do not provide habitat for special-status species. Parking areas, staging and disposal site locations shall similarly be located in areas without native vegetation or special-status species habitat. All disturbances, Project vehicles and equipment shall be confined to the flagged areas.</li> <li>2. Minimize Road Impacts. New and existing roads that are planned for construction, widening, or other improvements shall not extend beyond the flagged impact area as described above. All vehicles passing or turning around would do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, the route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction.</li> <li>3. Minimize Traffic Impacts. Vehicular traffic during Project construction and operation shall be confined to existing routes of travel to and from the Project site, and cross country vehicle and equipment use outside designated work areas shall be prohibited. The speed limit shall not exceed 25 miles per hour within the Project area, on maintenance roads for linear facilities, or on access roads to the Project site.</li> </ol>	<p>All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented. Implementation of the measures shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of Project construction, the Project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures have been completed. As part of the Annual Compliance Report, each year following construction the Designated Biologist shall provide a report to the CPM that describes compliance with avoidance and minimization measures to be implemented during operation (for example, a summary of the incidence of roadkilled animals during the year, implementation of measures to avoid toxic spills, erosion and sedimentation, efforts to enforce worker guidelines, etc.).</p> <p>No less than 30 days prior to construction-related ground disturbance the Project owner shall provide the CPM, USFWS and CDFG with plans showing the design of a culvert under the Project Site Access Road that would provide access for desert tortoise and other wildlife. No less than 30 days after of completion of construction of the Project site access road the Project owner shall provide as-built drawings of the culvert.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>4. Monitor During Construction. In areas that have not been fenced with desert tortoise exclusion fencing and cleared, the Designated Biologist shall be present at the construction site during all Project activities that have potential to disturb soil, vegetation, and wildlife. The Designated Biologist or Biological Monitor shall clear ahead of equipment during brushing and grading activities. If desert tortoises are found during construction monitoring, procedures outlined in <b>BIO-9</b> shall be implemented.</p> <p>5. Minimize Impacts of Transmission/Pipeline Alignments, Roads, and Staging Areas. Staging areas for construction on the plant site shall be within the area that has been fenced with desert tortoise exclusion fencing and cleared. For construction activities outside of the plant site (transmission line, pipeline alignments) access roads, pulling sites, and storage and parking areas shall be designed, installed, and maintained with the goal of minimizing impacts to native plant communities and sensitive biological resources. Transmission lines and all electrical components shall be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee's (APLIC's) <i>Suggested Practices for Avian Protection on Power Lines</i> (APLIC 2006) and <i>Mitigating Bird Collisions with Power Lines</i> (APLIC 1994) to reduce the likelihood of large bird electrocutions and collisions. Where feasible avoid impacts to desert washes and special-status plants by adjusting the locations of poles and laydown areas, and the alignment of the roads and pipelines. Construction drawings and grading plans shall depict the locations of sensitive resources and demonstrate where temporary impacts to sensitive resources can be avoided and where they cannot.</p> <p>6. Avoid Use of Toxic Substances. Soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants.</p> <p>7. Minimize Lighting Impacts. Facility lighting shall be designed, installed, and maintained to prevent side casting of light towards wildlife habitat.</p> <p>8. Minimize Noise Impacts. A continuous low-pressure technique shall be used for steam blows, to the extent possible, in order to reduce noise levels in sensitive habitat proximate to the Project site. Loud construction activities (e.g., unsilenced high pressure steam blowing, pile driving, or other) shall be avoided from February 15 to April 15, when it would result in noise levels over 65 dBA in nesting habitat (excluding noise from passing vehicles). Loud construction activities may be permitted from February 15 to April 15 only if:</p> <p>a. The Designated Biologist provides documentation (i.e., nesting bird data collected using methods described in <b>BIO-15</b> and maps depicting location of the nest survey area in relation to noisy construction) to the CPM indicating that no active nests would be subject to 65 dBA noise, OR</p> <p>b. The Designated Biologist or Biological Monitor monitors active nests within the range of construction-related noise exceeding 65 dBA. The monitoring shall be conducted in accordance with Nesting Bird Monitoring and Management Plan approved by the CPM. The Plan shall include adaptive management measures to prevent disturbance to nesting birds from construction related noise. Triggers for adaptive management shall be evidence of Project-related disturbance to nesting birds such as: agitation behavior (displacement, avoidance, and defense); increased vigilance behavior at nest sites; changes in foraging and feeding behavior, or nest site abandonment. The Nesting Bird Monitoring and Management Plan shall include a description of adaptive management actions, which shall include, but not be limited to, cessation of construction activities that are deemed by the Designated Biologist to be the source of disturbance to the nesting bird.</p>	<p>If loud construction activities are proposed between February 15 to April 15 which would result in noise levels over 65 dBA in nesting habitat, the Project owner shall submit nest survey results (as described in 8a) to the CPM no more than 7 days before initiating such construction. If an active nest is detected within this survey area the Project owner shall submit a Nesting Bird Monitoring and Management Plan to the CPM for review and approval no more than 7 days before initiating noisy construction.</p>	



## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>9. Avoid Vehicle Impacts to Desert Tortoise. Parking and storage shall occur within the area enclosed by desert tortoise exclusion fencing to the extent feasible. No vehicles or construction equipment parked outside the fenced area shall be moved prior to an inspection of the ground beneath the vehicle for the presence of desert tortoise. If a desert tortoise is observed outside the areas fenced with desert tortoise exclusion fencing it shall be left to move on its own. If it does not move within 15 minutes, a Designated Biologist or Biological Monitor under the Designated Biologist's direct supervision may move it out of harms way as described in the USFWS Desert Tortoise Field Manual (USFWS 2009a)</p> <p>10. Install Box Culvert. To provide for connectivity for desert tortoise and other wildlife, the Project owner shall install a box culvert suitable for passage by desert tortoise and other wildlife under the Project Site Access Road. The box culvert shall be a concrete structure no less than 4 feet high and 6 feet wide with 3:1 side slopes and shall maintain a minimum of 18 inches of native material on the floor of the culvert at all times to facilitate tortoise movement.</p> <p>11. Avoid Wildlife Pitfalls. To avoid trapping desert tortoise and other wildlife in trenches, pipes or culverts, the following measures shall be implemented:</p> <ol style="list-style-type: none"> <li>Backfill Trenches. At the end of each work day, the Designated Biologist shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) outside the area fenced with desert tortoise exclusion fencing have been backfilled. If backfilling is not feasible, all trenches, bores, and other excavations shall be sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, or covered completely to prevent wildlife access, or fully enclosed with desert tortoise-exclusion fencing. All trenches, bores, and other excavations outside the areas permanently fenced with desert tortoise exclusion fencing shall be inspected periodically throughout the day, at the end of each workday, and at the beginning of each day by the Designated Biologist or a Biological Monitor. Should a tortoise or other wildlife become trapped, the Designated Biologist or Biological Monitor shall move the tortoise out of harm's way as described in the USFWS Desert Tortoise Field Manual (USFWS 2009a). Any wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed.</li> <li>Avoid Entrapment of Desert Tortoise. Any construction pipe, culvert, or similar structure with a diameter greater than 3 inches, stored less than 8 inches aboveground and within desert tortoise habitat (i.e., outside the permanently fenced area) for one or more nights, shall be inspected for tortoises before the material is moved, buried or capped. As an alternative, all such structures may be capped before being stored outside the fenced area, or placed on elevated pipe racks. These materials would not need to be inspected or capped if they are stored within the permanently fenced area after the clearance surveys have been completed.</li> </ol> <p>12. Minimize Standing Water. Water applied to dirt roads and construction areas (trenches or spoil piles) for dust abatement shall use the minimal amount needed to meet safety and air quality standards in an effort to prevent the formation of puddles, which could attract desert tortoises and common ravens to construction sites. A Biological Monitor shall patrol these areas to ensure water does not puddle and shall take appropriate action to reduce water application where necessary.</p> <p>13. Dispose of Road-killed Animals. Road killed animals or other carcasses detected by personnel on roads associated with the Project area will be reported immediately to a Biological Monitor or Designated Biologist (or Project Environmental Compliance Monitor, during Project operations), who will promptly remove the roadkill. For special-status species road-kill, the Biological Monitor or Designated Biologist (or Project Environmental Compliance Monitor, during Project operations) shall contact CDFG and USFWS within 1 working day of detection of the carcass for guidance on disposal or storage of the carcass; all other road kill shall be disposed of promptly. The Biological Monitor shall provide the special-status species record as described in <b>BIO-11</b> below.</p>		

## APPLICANT PROPOSED MEASURES

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<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>14. Minimize Spills of Hazardous Materials. All vehicles and equipment shall be maintained in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The Designated Biologist shall be informed of any hazardous spills immediately as directed in the Project Hazardous Materials Plan. Hazardous spills shall be immediately cleaned up and the contaminated soil properly disposed of at a licensed facility. Servicing of construction equipment shall take place only at a designated area. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills.</p> <p>15. Worker Guidelines. During construction all trash and food-related waste shall be placed in self-closing containers and removed daily from the site. Workers shall not feed wildlife or bring pets to the Project site. Except for law enforcement personnel, no workers or visitors to the site shall bring firearms or weapons. Vehicular traffic shall be confined to existing routes of travel to and from the Project site, and cross country vehicle and equipment use outside designated work areas shall be prohibited. The speed limit when traveling on dirt access routes within desert tortoise habitat shall not exceed 25 miles per hour.</p> <p>16. Implement Sediment Control Measures Near Desert Washes. Standard erosion control measures shall be implemented for all phases of construction and operation where sediment run-off from exposed slopes threatens to enter waters of the state. Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into the stream. Areas of disturbed soils (access and staging areas) which slope toward drainages shall be stabilized to reduce erosion potential.</p> <p>17. Monitor Ground Disturbing Activities Prior to Pre-Construction Site Mobilization. If pre-construction site mobilization requires ground- disturbing activities such as for geotechnical borings or hazardous waste evaluations, a Designated Biologist or Biological Monitor shall be present to monitor any actions that could disturb soil, vegetation, or wildlife.</p> <p>18. Control Unauthorized Use of the Project Access Roads. The secondary access road shall be gated at both ends and restricted to emergency response personnel as per proposed <b>COC WORKER SAFETY-6</b>. The Project owner shall also monitor and control any unauthorized use of the Project roads with gates, signage, and fencing as necessary to minimize traffic-related roadkills and ORV disturbance off-roads.</p> <p>19. Implement Erosion Control Measures. All disturbed soils and roads within the Project site shall be stabilized to reduce erosion potential, both during and following construction. All areas subject to temporary disturbance shall be restored to pre-project grade and stabilized to prevent erosion and promote natural revegetation. Temporarily disturbed areas within the Project area include, but are not limited to: linear facilities, temporary access roads, temporary lay-down and staging areas. If erosion control measures include the use of seed, only locally native plant species from a local seed source shall be used. Local seed includes seeds from plants within the Chuckwalla Valley or Colorado River Hydrologic Units.</p> <p>20. Avoid Spreading Weeds. Prior to the start of construction, flag and avoid dense populations of highly invasive noxious weeds. If these areas cannot be avoided, they shall be pre-treated by the methods described in <b>BIO-14</b> (Weed Management Plan). Noxious weeds and other invasive non-native plants in the temporarily disturbed areas shall be managed according to the requirements in BIO-14.</p> <p>21. Salvage Topsoil. Topsoil from the Project site shall be salvaged, preserved and re-used for restoration of temporarily disturbed areas. Salvaged topsoil shall be collected, stored and applied in a way that maintains the viability of seed and soil crusts. The Project owner shall excavate and collect the upper soil layer (the top 1 to 2 inches that includes the seed bank and biotic soil crust) as well as the lower soil layer up to a depth of 6 to 8 inches. The upper and lower soil layers shall be stockpiled separately in areas that will not be impacted by other grading, flooding, erosion, or pollutants. If the soil is to be stored more than 2 weeks it shall be spread out to a depth of no more than 6 inches to</p>		

### APPLICANT PROPOSED MEASURES

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<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>maintain the seed and soil crust viability. The Project owner shall install temporary construction fencing around stockpiled topsoil, and signage that indicates whether the pile is the upper layer seed bank, or the lower layer, and clearly indicates that the piles are for use only in erosion control. After construction, the Project owner shall replace the topsoil in the temporarily disturbed areas in the reverse order of stockpiling, starting with the 6-8 inch layer of subsoil, and then the seed-containing upper layer using a harrow or similar equipment to thinly distribute the layer to depths no greater than 1 to 2 inches.</p> <p>22. Decommission Temporary Access Roads with Vertical Mulching. Discourage ORV use of temporary construction roads by installing vertical mulching at the head of the road to a distance necessary to obscure the road from view. Boulder barricades and gates shall not be used unless the remainder of the site is fenced to prevent driving around the gate or barricade. Designated ORV routes and roads shall not be closed.</p>		
<p><b>BIO-9, Desert Tortoise Protection:</b> The Project owner shall undertake appropriate measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to desert tortoise. Methods for clearance surveys, fence specification and installation, tortoise handling, artificial burrow construction, egg handling and other procedures shall be consistent with those described in the USFWS' 2009 Desert Tortoise Field Manual &lt;<a href="http://www.fws.gov/ventura/speciesinfo/protocols_guidelines">http://www.fws.gov/ventura/speciesinfo/protocols_guidelines</a>&gt; or more current guidance provided by CDFG and USFWS. The Project owner shall also implement all terms and conditions described in the Biological Opinion prepared by USFWS. These measures include, but are not limited to, the following:</p> <ol style="list-style-type: none"> <li>1. Desert Tortoise Fencing along Interstate 10. To avoid increases in vehicular-related mortality from disruption of local movement patterns along the existing ephemeral wash systems, desert tortoise-proof fencing shall be installed along the existing freeway right-of-way fencing, on both sides of I 10, for the entire east-west dimension of the Project configuration. The tortoise fencing shall be designed to direct tortoises to existing undercrossing to provide safe passage under the freeway, and shall be regularly inspected and maintained for the life of the Project.</li> <li>2. Desert Tortoise Exclusion Fence Installation. To avoid impacts to desert tortoises, permanent desert tortoise exclusion fencing shall be installed along the permanent perimeter security fence and temporarily installed along the utility corridors. The proposed alignments for the permanent perimeter fence and utility rights-of-way fencing shall be flagged and surveyed within 24 hours prior to the initiation of fence construction. Clearance surveys of the perimeter fence and utility rights-of-way alignments shall be conducted by the Designated Biologist(s) using techniques outlined in the USFWS' 2009 Desert Tortoise Field Manual. and may be conducted in any season with USFWS and CDFG approval. Biological Monitors may assist the Designated Biologist under his or her supervision. These fence clearance surveys shall provide 100 percent coverage of all areas to be disturbed and an additional transect along both sides of the fence line. This fence line transect shall cover an area approximately 90 feet wide centered on the fence alignment. Transects shall be no greater than 15 feet apart. All desert tortoise burrows, and burrows constructed by other species that might be used by desert tortoises, shall be examined to assess occupancy of each burrow by desert tortoises and handled in accordance with the USFWS' 2009 Desert Tortoise Field Manual. Any desert tortoise located during fence clearance surveys shall be handled by the Designated Biologist(s) in accordance with the USFWS' 2009 Desert Tortoise Field Manual. <ol style="list-style-type: none"> <li>a. Timing, Supervision of Fence Installation. The exclusion fencing shall be installed prior to the onset of site clearing and grubbing. The fence installation shall be supervised by the Designated Biologist and monitored by the Biological Monitors to ensure the safety of any tortoise present.</li> <li>b. Fence Material and Installation. The permanent tortoise exclusionary fencing shall be constructed in accordance with the USFWS' 2009 Desert Tortoise Field Manual (Chapter 8 – Desert Tortoise Exclusion Fence).</li> </ol> </li> </ol>	<p>All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented. Implementation of the measures shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of desert tortoise clearance surveys the Designated Biologist shall submit a report to BLM, the CPM, USFWS, and CDFG describing implementation of each of the mitigation measures listed above. The report shall include the desert tortoise survey results, capture and release locations of any relocated desert tortoises, and any other information needed to demonstrate compliance with the measures described above.</p> <p>Within 6 months of completion of desert tortoise exclusion fence for Phase 1, I-10 desert tortoise exclusion fencing shall be installed. Within 3 months of completion of I-10 desert tortoise exclusion fence construction, the Project owner shall provide the CPM, BLM, USFWS, and CDFG with maps as well as photographic documentation showing the design and location of the fencing on both sides of I-10 south of the Project site.</p> <p>The Project Owner shall provide evidence of approval from Caltrans for installation of desert tortoise fencing along I-10 within their right-of-way at least 30-days prior to construction of the fencing.</p>	CEC

## APPLICANT PROPOSED MEASURES

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<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>c. Security Gates. Security gates shall be designed with minimal ground clearance to deter ingress by tortoises. The gates may be electronically activated to open and close immediately after the vehicle(s) have entered or exited to prevent the gates from being kept open for long periods of time. Cattle grating designed to safely exclude desert tortoise shall be installed at the gated entries to discourage tortoises from gaining entry</p> <p>d. Fence Inspections. Following installation of the desert tortoise exclusion fencing for both the permanent site fencing and temporary fencing in the utility corridors, the fencing shall be regularly inspected. If tortoise were moved out of harm's way during fence construction, permanent and temporary fencing shall be inspected at least two times a day for the first 7 days to ensure a recently moved tortoise has not been trapped within the fence. Thereafter, permanent fencing shall be inspected monthly and during and within 24 hours following all major rainfall events. A major rainfall event is defined as one for which flow is detectable within the fenced drainage. Any damage to the fencing shall be temporarily repaired immediately to keep tortoises out of the site, and permanently repaired within 48 hours of observing damage. Inspections of permanent site fencing shall occur for the life of the project. Temporary fencing shall be inspected weekly and, where drainages intersect the fencing, during and within 24 hours following major rainfall events. All temporary fencing shall be repaired immediately upon discovery and, if the fence may have permitted tortoise entry while damaged, the Designated Biologist shall inspect the area for tortoise.</p> <p>3. Desert Tortoise Clearance Surveys within the Plant Site. Clearance surveys shall be conducted in accordance with the USFWS Desert Tortoise Field Manual (USFWS 2009) (Chapter 6 – Clearance Survey Protocol for the Desert Tortoise – Mojave Population) and shall consist of two surveys covering 100 percent the project area by walking transects no more than 15-feet apart. If a desert tortoise is located on the second survey, a third survey shall be conducted. Each separate survey shall be walked in a different direction to allow opposing angles of observation. Clearance surveys of the plant site may only be conducted when tortoises are most active (April through May or September through October) unless the project receives approval from CDFG and USFWS. Clearance surveys of linear features may be conducted during anytime of the year. Any tortoise located during clearance surveys of the power plant site and linear features shall be translocated or relocated and monitored in accordance with the Desert Tortoise Relocation/Translocation Plan:</p> <p>a. Burrow Searches. During clearance surveys all desert tortoise burrows, and burrows constructed by other species that might be used by desert tortoises, shall be examined by the Designated Biologist, who may be assisted by the Biological Monitors, to assess occupancy of each burrow by desert tortoises and handled in accordance with the USFWS Desert Tortoise Field Manual (USFWS 2009). To prevent reentry by a tortoise or other wildlife, all burrows shall be collapsed once absence has been determined in accordance with the Desert Tortoise Relocation/Translocation Plan. Tortoises taken from burrows and from elsewhere on the power plant site shall be relocated or translocated as described in the Desert Tortoise Relocation/Translocation Plan.</p> <p>b. Burrow Excavation/Handling. All potential desert tortoise burrows located during clearance surveys would be excavated by hand, tortoises removed, and collapsed or blocked to prevent occupation by desert tortoises in accordance with the Desert Tortoise Relocation/Translocation Plan. All desert tortoise handling, and removal, and burrow excavations, including nests, would be conducted by the Designated Biologist, who may be assisted by a Biological Monitor in accordance with the USFWS Desert Tortoise Field Manual (USFWS 2009).</p> <p>4. Monitoring Following Clearing. Following the desert tortoise, clearance and removal from the power plant site and utility corridors, workers and heavy equipment shall be allowed to enter the project site to perform clearing, grubbing, leveling, and trenching activities. A Designated Biologist or Biological Monitor shall be onsite for clearing and grading activities to move tortoises missed during the initial tortoise clearance survey. Should a tortoise be discovered, it shall be relocated or translocated as described in the Desert Tortoise Relocation/Translocation Plan.</p>		

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<b>BIOLOGICAL RESOURCES (cont.)</b>		
5. Reporting. The Designated Biologist shall record the following information for any desert tortoises handled: a) the locations (narrative and maps) and dates of observation; b) general condition and health, including injuries, state of healing and whether desert tortoise voided their bladders; c) location moved from and location moved to (using GPS technology); d) gender, carapace length, and diagnostic markings (i.e., identification numbers or marked lateral scutes); e) ambient temperature when handled and released; and f) digital photograph of each handled desert. Desert tortoise moved from within project areas shall be marked and monitored in accordance with the Desert Tortoise Relocation/Translocation Plan.		
<p><b>BIO-10, Desert Tortoise Relocation/Translocation Plan:</b> The Project owner shall develop and implement a final Desert Tortoise Relocation/Translocation Plan (Plan) that is consistent with current USFWS approved guidelines, and meets the approval of the CPM. The Plan shall include guidance specific to each of the two phases of Project construction, as described in <b>BIO-29</b> (Phasing), and shall include measures to minimize the potential for repeated translocations of individual desert tortoises. The goals of the Desert Tortoise Relocation/Translocation Plan shall be to: relocate/translocate all desert tortoises from the project site to nearby suitable habitat; minimize impacts on resident desert tortoises outside the project site; minimize stress, disturbance, and injuries to relocated/translocated tortoises; and assess the success of the translocation effort through monitoring. The final Plan shall be based on the draft Desert Tortoise Relocation/Translocation Plan prepared by the Applicant (AECOM 2010a, DR-BIO-55) and shall include all revisions deemed necessary by BLM, USFWS, CDFG and the Energy Commission staff.</p>	<p>At least 30 days prior to site mobilization, the Project owner shall provide the CPM with the final version of a Plan that has been reviewed and approved by the CPM in consultation with BLM, USFWS and CDFG. All modifications to the approved Plan shall be made only after approval by the CPM, in consultation with BLM, USFWS and CDFG.</p> <p>Within 30 days after initiation of relocation and/or translocation activities, the Designated Biologist shall provide to the CPM for review and approval, a written report identifying which items of the Plan have been completed, and a summary of all modifications to measures made during implementation of the Plan.</p>	CEC
<p><b>BIO-11, Desert Tortoise Compliance Verification:</b> The Project owner shall provide Energy Commission, BLM, CDFG and USFWS staff with reasonable access to the Project site and compensation lands under the control of the Project owner and shall otherwise fully cooperate with the Energy Commission's and BLM's efforts to verify the Project owner's compliance with, or the effectiveness of, mitigation measures set forth in the conditions of certification. The Designated Biologist shall do all of the following:</p> <ol style="list-style-type: none"> <li>1. Notification. Notify the CPM at least 14 calendar days before initiating construction-related ground disturbance activities; immediately notify the CPM in writing if the Project owner is not in compliance with any conditions of certification, including but not limited to any actual or anticipated failure to implement mitigation measures within the time periods specified in the conditions of certification;</li> <li>2. Monitoring During Grubbing and Grading. Remain on site daily while vegetation salvage, grubbing, grading and other ground- disturbance construction activities are taking place to avoid or minimize take of listed species, and verify personally or use Biological Monitors to check for compliance with all impact avoidance and minimization measures, including checking all exclusion zones to ensure that signs, stakes, and fencing are intact and that human activities are restricted in these protective zones.</li> <li>3. Monthly Compliance Inspections. Conduct compliance inspections at a minimum of once per month after clearing, grubbing, and grading are completed and submit a monthly compliance report to the CPM, BLM, USFWS and CDFG during construction</li> <li>4. Notification of Injured or Dead Listed Species. If an injured or dead listed species is detected within or near the Project Disturbance Area the CPM, BLM, the Ontario Office of CDFG, and the Carlsbad Office of USFWS shall be notified</li> </ol>	<p>No later than 2 days following the above required notification of a sighting, injury, kill, or relocation of a listed species, the Project owner shall deliver to the CPM, BLM, CDFG, and USFWS via FAX or electronic communication the written report from the Designated Biologist describing all reported incidents of injury, kill, or relocation of a listed species, identifying who was notified, and explaining when the incidents occurred. In the case of a sighting in an active construction area, the Project owner shall, at the same time, submit a map (e.g., using Geographic Information Systems) depicting both the limits of construction and sighting location to the CPM, BLM, CDFG and USFWS.</p> <p>No later than 45 days after initiation of Project operation the Designated Biologist shall provide the CPM and BLM a Final Listed Species Mitigation Report.</p> <p>Beginning with the first month after clearing, grubbing and grading are completed and continuing every month until construction is complete the Project owner shall submit a report describing the results of Monthly Compliance Inspections to the CPM, BLM, USFWS and CDFG.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>immediately by phone. Notification shall occur no later than noon on the business day following the event if it occurs outside normal business hours so that the agencies can determine if further actions are required to protect listed species. Written follow-up notification via FAX or electronic communication shall be submitted to these agencies within two calendar days of the incident and include the following information as relevant:</p> <p>a. Injured Desert Tortoise. If a desert tortoise is injured as a result of Project-related activities during construction, the Designated Biologist or approved Biological Monitor shall immediately take it to a CDFG-approved wildlife rehabilitation and/or veterinarian clinic. Any veterinarian bills for such injured animals shall be paid by the Project owner. Following phone notification as required above, the CPM, CDFG, and USFWS shall determine the final disposition of the injured animal, if it recovers. Written notification shall include, at a minimum, the date, time, and location, circumstances of the incident, and the name of the facility where the animal was taken.</p> <p>b. Desert Tortoise Fatality. If a desert tortoise is killed by Project-related activities during construction or operation, a written report with the same information as an injury report shall be submitted to the CPM, BLM, the Ontario Office of CDFG, and the Carlsbad Office of USFWS. These desert tortoises shall be salvaged according to guidelines described in <i>Salvaging Injured, Recently Dead, Ill, and Dying Wild, Free-Roaming Desert Tortoise</i> (Berry 2001). The Project owner shall pay to have the desert tortoises transported and necropsied. The report shall include the date and time of the finding or incident.</p> <p>5. Final Listed Species Report. The Designated Biologist shall provide the CPM and BLM a Final Listed Species Mitigation Report that includes, at a minimum: 1) a copy of the table in the BRMIMP with notes showing when each of the mitigation measures was implemented; 2) all available information about Project-related incidental take of listed species; 3) information about other Project impacts on the listed species; 4) construction dates; 5) an assessment of the effectiveness of conditions of certification in minimizing and compensating for Project impacts; 6) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future Projects on the listed species; and 7) any other pertinent information, including the level of take of the listed species associated with the Project.</p> <p>6. Stop Work Order. The CPM may issue the Project owner a written stop work order to suspend any activity related to the construction or operation of the Project to prevent or remedy a violation of one or more conditions of certification (including but not limited to failure to comply with reporting, monitoring, or habitat acquisition obligations) or to prevent the illegal take of an endangered, threatened, or candidate species. The Project owner shall comply with the stop work order immediately upon receipt thereof.</p>		
<p><b>BIO-12, Desert Tortoise Compensatory Mitigation:</b> To fully mitigate for habitat loss and potential take of desert tortoise, the Project owner shall provide compensatory mitigation per <b>BIO-29</b> – Table 2 (see 2013 PSIII. LLC, Revised Plan of Development, p. 121), adjusted to reflect the final Project footprint. For purposes of this condition, the Project footprint means all lands disturbed in the construction and operation of the Palen Project, including all Project linears, as well as undeveloped areas inside the Project's boundaries that will no longer provide viable long-term habitat for the desert tortoise. To satisfy this condition, the Project owner shall acquire, protect and transfer 5 acres of desert tortoise habitat for every acre of habitat within critical habitat and within the final Project footprint, and 1 acre of desert tortoise habitat for every acre of habitat outside of critical habitat but within the final Project footprint, and provide associated funding for the acquired lands, as specified below. Condition <b>BIO-28</b> may provide the Project owner with another option for satisfying some or all of the requirements in this condition. In lieu of acquiring lands itself, the Project owner may satisfy the requirements of this condition by depositing funds into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF), as provided below in section 3.i. of this condition.</p>	<p>If the mitigation actions required under this condition are not completed prior to the start of ground-disturbing activities, the Project owner shall provide the CPM and CDFG with an approved form of Security in accordance with this condition of certification no later than 30 days prior to beginning Project ground-disturbing activities. Actual Security shall be provided no later than 7 days prior to the beginning of Project ground-disturbing activities. If Security is provided, the Project owner, or an approved third party, shall complete and provide written verification to the CPM, CDFG, BLM and USFWS of the compensation lands acquisition and transfer within 18 months of the start of Project ground-disturbing activities.</p>	CEC

## APPLICANT PROPOSED MEASURES

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<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>The timing of the mitigation shall correspond with the timing of the site disturbance activities as stated in <b>BIO-29</b> (phasing). If compensation lands are acquired in fee title or in easement, the requirements for acquisition, initial improvement and long-term management of compensation lands include all of the following:</p> <ol style="list-style-type: none"> <li>1. Selection Criteria for Compensation Lands. The compensation lands selected for acquisition in fee title or in easement shall: <ol style="list-style-type: none"> <li>a. be within the Colorado Desert Recovery Unit, with potential to contribute to desert tortoise habitat connectivity and build linkages between desert tortoise designated critical habitat, known populations of desert tortoise, and/or other preserve lands;</li> <li>b. provide habitat for desert tortoise with capacity to regenerate naturally when disturbances are removed;</li> <li>c. be prioritized near larger blocks of lands that are either already protected or planned for protection, such as DWMAs within the Colorado Desert Recovery Unit (Chuckwalla DWMA as first priority, Chemehuevi DMWA as the second) or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;</li> <li>d. be connected to lands with desert tortoise habitat equal to or better quality than the Project Site, ideally with populations that are stable, recovering, or likely to recover;</li> <li>e. not have a history of intensive recreational use or other disturbance that does not have the capacity to regenerate naturally when disturbances are removed or might make habitat recovery and restoration infeasible;</li> <li>f. not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;</li> <li>g. not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and</li> <li>h. have water and mineral rights included as part of the acquisition, unless the CPM, in consultation with CDFG, BLM and USFWS, agrees in writing to the acceptability of the land.</li> </ol> </li> <li>2. Review and Approval of Compensation Lands Prior to Acquisition. The Project owner shall submit a formal acquisition proposal to the CPM, CDFG, USFWS, and BLM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for desert tortoise in relation to the criteria listed above. Approval from the CPM and CDFG, in consultation with BLM and the USFWS, shall be required for acquisition of all compensatory mitigation parcels.</li> <li>3. Compensation Lands Acquisition Requirements. The Project owner shall comply with the following requirements relating to acquisition of the compensation lands after the CPM and CDFG, in consultation with BLM and the USFWS, have approved the proposed compensation lands: <ol style="list-style-type: none"> <li>a. Preliminary Report. The Project owner, or approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the CPM and CDFG. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM and CDFG, in consultation with BLM and the USFWS. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission and the Wildlife Conservation Board.</li> </ol> </li> </ol>	<p>The Project owner may elect to fund the acquisition and initial improvement of compensation lands through NFWF or other approved third party by depositing funds for that purpose into NFWF's REAT Account. Initial deposits for this purpose must be made in the same amounts as the Security required in section 3.h. of this condition. Payment of the initial funds for acquisition and initial improvement must be made at least 30 days prior to the start of ground-disturbing activities.</p> <p>No fewer than 90 days prior to acquisition of the property, the Project owner shall submit a formal acquisition proposal to the CPM, CDFG, USFWS, and BLM describing the parcels intended for purchase and shall obtain approval from the CPM and CDFG prior to the acquisition.</p> <p>No fewer than 30 days after acquisition of the property the Project owner shall deposit the funds required by Section 3e above (long term management and maintenance fee) and provide proof of the deposit to the CPM.</p> <p>The Project owner, or an approved third party, shall provide the CPM, CDFG, BLM, and USFWS with a management plan for the compensation lands within 180 days of the land or easement purchase, as determined by the date on the title. The CPM shall review and approve the management plan for the compensatory mitigation lands, in consultation with CDFG, BLM and the USFWS.</p> <p>Within 90 days after completion of all project related ground disturbance, the Project owner shall provide to the CPM, CDFG, BLM and USFWS an analysis, based on aerial photography, with the final accounting of the amount of habitat disturbed during Project construction. This shall be the basis for the final number of acres required to be acquired.</p>	

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Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>b. Title/Conveyance. The Project owner shall transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement as required by the CPM and CDFG. Transfer of either fee title or an approved conservation easement will usually be sufficient, but some situations, e.g., the donation of lands burdened by a conservation easement to BLM, will require that both types of transfers be completed. Any transfer of a conservation easement or fee title must be to CDFG, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to BLM under terms approved by the CPM and CDFG. If an approved non-profit organization holds title to the compensation lands, a conservation easement shall be recorded in favor of CDFG in a form approved by CDFG. If an approved non-profit holds a conservation easement, CDFG shall be named a third party beneficiary.</p> <p>c. Initial Habitat Improvement Fund. The Project owner shall fund the initial protection and habitat improvement of the compensation lands. Alternatively, a non-profit organization may hold the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965) and if it meets the approval of CDFG and the CPM. If CDFG takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFG or its designee.</p> <p>d. Property Analysis Record. Upon identification of the compensation lands, the Project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate long-term maintenance and management fee to fund the in-perpetuity management of the acquired mitigation lands.</p> <p>e. Long-term Maintenance and Management Fund. In accordance with BIO-29 (phasing), the Project owner shall deposit in NFWF's REAT Account a capital long-term maintenance and management fee in the amount determined through the Property Analysis Record (PAR) or PAR-like analysis conducted for the compensation lands.</p> <p>The CPM, in consultation with CDFG, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity. If CDFG takes fee title to the compensation lands, CDFG shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for CDFG and with CDFG supervision.</p> <p>f. Interest, Principal, and Pooling of Funds. The Project owner, the CPM and CDFG shall ensure that an agreement is in place with the long-term maintenance and management fee holder/manager to ensure the following conditions:</p> <p>i. Interest. Interest generated from the initial capital long-term maintenance and management fee shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action approved by CDFG designed to protect or improve the habitat values of the compensation lands.</p> <p>ii. Withdrawal of Principal. The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by the CDFG or the approved third-party long-term maintenance and management fee manager to ensure the continued viability of the species on the compensation lands. If CDFG takes fee title to the compensation lands, monies received by CDFG pursuant to this provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless CDFG designates NFWF or another entity to manage the long-term maintenance and management fee for CDFG.</p>		



## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>iii. Pooling Long-Term Maintenance and Management Fee Funds. CDFG, or a CPM-and CDFG-approved non-profit organization qualified to hold long-term maintenance and management fees solely for the purpose to manage lands in perpetuity, may pool the endowment with other endowments for the operation, management, and protection of the compensation lands for local populations of desert tortoise. However, for reporting purposes, the long-term maintenance and management fee fund must be tracked and reported individually to the CDFG and CPM.</p> <p>g. Other expenses. In addition to the costs listed above, the Project owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to title and document review costs, expenses incurred from other state agency reviews, and overhead related to providing compensation lands to CDFG or an approved third party; escrow fees or costs; environmental contaminants clearance; and other site cleanup measures.</p> <p>h. Mitigation Security. The Project owner shall provide financial assurances in accordance with <b>BIO-29</b> (phasing) to the CPM and CDFG with copies of the document(s) to BLM and the USFWS, to guarantee that an adequate level of funding is available to implement the mitigation measures described in this condition. These funds shall be used solely for implementation of the measures associated with the Project in the event the Project owner fails to comply with the requirements specified in this condition, or shall be returned to the Project owner upon successful compliance with the requirements in this condition. The CPM's or CDFG's use of the security to implement measures in this condition may not fully satisfy the Project owner's obligations under this condition. Financial assurance can be provided to the CPM and CDFG in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security"). Prior to submitting the Security to the CPM, the Project owner shall obtain the CPM's approval in consultation with CDFG, BLM and the USFWS, of the form of the Security. Security shall be provided as described in <b>BIO-29 – Table 3</b> (see 2010 CEC PSPP Commission Decision, pp. 143, which would be updated to reflect current costs), and the beginning of the conditions of certification subsection. The actual costs to comply with this condition will vary depending on the final footprint of the Project and its two phases, and the actual costs of acquiring, improving and managing the compensation lands.</p> <p>i. NFWF REAT Account. The Project owner may elect to fund the acquisition and initial improvement of compensation lands through NFWF by depositing funds for that purpose into NFWF's REAT Account. Initial deposits for this purpose must be made in the same amounts as the security required in section 3.h., above, and may be provided in lieu of security. If this option is used for the acquisition and initial improvement, the Project owner shall make an additional deposit into the REAT Account if necessary to cover the actual acquisition costs and administrative costs and fees of the compensation land purchase once land is identified and the actual costs are known. If the actual costs for acquisition and administrative costs and fees are less than described in <b>Biological Resources Table 6b</b> (see 2010 CEC PSPP Revised Staff Assessment, Part II, pp. C.2-68 – C.2-72), the excess money deposited in the REAT Account shall be returned to the Project owner. Money deposited for the initial protection and improvement of the compensation lands shall not be returned to the Project owner.</p> <p>The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the Energy Commission and CDFG. Such delegation shall be subject to approval by the CPM and CDFG, in consultation with BLM and USFWS, prior to land acquisition, initial protection or maintenance and management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be implemented with 18 months of the Energy Commission's approval.</p>		

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p><b>BIO-13, Raven Management Plan and Fee:</b> The Project owner shall implement a Raven Monitoring, Management, and Control Plan (Raven Plan) that is consistent with the most current USFWS-approved raven management guidelines, and which meets the approval of the CPM, in consultation with USFWS and CDFG. The draft Common Raven Monitoring, Management, and Control Plan submitted by the Applicant (AECOM 2010a, Attachment DR-BIO-57) shall provide the basis for the final Raven Plan, subject to review, revisions and approval from the CPM, CDFG and USFWS. The Raven Plan shall include but not be limited to a program to monitor raven presence in the Project vicinity, determine if raven numbers are increasing, and to implement raven control measures as needed based on that monitoring. The purpose of the plan is to avoid any Project-related increases in raven numbers during construction, operation, and decommissioning. In addition, the Project owner shall also provide funding for implementation of the USFWS Regional Raven Management Program, as described below.</p> <ol style="list-style-type: none"> <li>The Raven Plan shall: <ol style="list-style-type: none"> <li>Identify conditions associated with the Project that might provide raven subsidies or attractants;</li> <li>Describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities;</li> <li>Describe control practices for ravens;</li> <li>Establish thresholds that would trigger implementation of control practices;</li> <li>Address monitoring and nest removal during construction and for the life of the Project, and;</li> <li>Discuss reporting requirements.</li> </ol> </li> <li>USFWS Regional Raven Management Program. The Project owner shall submit payment to the project sub-account of the REAT Account held by the National Fish and Wildlife Foundation (NFWF) to support the USFWS Regional Raven Management Program. The one-time fee shall be as described by the USFWS in the <i>Renewable Energy Development and Common Raven Predation on the Desert Tortoise – Summary, dated May 2010</i> (USFWS 2010a) and the Cost Allocation Methodology for Implementation of the Regional Raven Management Plan, dated July 9, 2010) or more current guidance as provided by USFWS or CDFG (USFWS 2010b).</li> </ol>	<p>No less than 10 days prior to the start of any Project-related ground disturbance activities, the Project owner shall provide the CPM, USFWS, and CDFG with the final version of a Raven Plan. All modifications to the approved Raven Plan shall be made only with approval of the CPM in consultation with USFWS and CDFG.</p> <p>No less than 10 days prior to the start of any Project-related ground disturbance activities for each phase of Project construction as described in <b>BIO-29</b>, the Project owner shall provide documentation to the CPM, CDFG and USFWS that the one-time fee for the USFWS Regional Raven Management Program of has been deposited to the REAT-NFWS subaccount for the Project. Payment of the fees may be phased as described in <b>BIO-29 – Table 3</b> (see 2010 CEC PSPP Commission Decision, p. 143, which would be updated to reflect current costs).</p> <p>Within 30 days after completion of Project construction, the Project owner shall provide to the CPM for review and approval, a written report identifying which items of the Raven Plan have been completed, a summary of all modifications to mitigation measures made during the Project's construction phase, and which items are still outstanding.</p> <p>As part of the annual compliance report, each year following construction the Designated Biologist shall provide a report to the CPM that includes: a summary of the results of raven management and control activities for the year; a discussion of whether raven control and management goals for the year were met; and recommendations for raven management activities for the upcoming year.</p>	CEC
<p><b>BIO-14, Weed Management Plan:</b> The Project owner shall implement a Weed Management Plan (Plan) that meets the approval of the CPM. The objective of the Plan shall be to prevent the introduction of any new weeds and the spread of existing weeds as a result of Project construction, operation, and decommissioning. The Draft Weed Management Plan, submitted by the Applicant, shall provide the basis for the final Plan, subject to review and revisions from the CPM. The Plan shall include the following:</p> <ol style="list-style-type: none"> <li><b>Weed Plan Requirements.</b> The Project owner shall provide a map to the CPM indicating the location of the Weed Management Area, which shall include all areas within 100 feet of the Project Disturbance Area, access roads, staging and laydown sites, and all other areas subject to temporary disturbance. The Project owner shall provide a Plan for the Weed Management Area includes at a minimum the following information: specific weed management objectives and measures for each target non-native weed species; baseline conditions; a map of the Weed Management Areas; map of existing populations of target weeds within 100 feet of the Project Disturbance Area and access roads; weed risk assessment; measures to prevent the introduction and spread of weeds; measures to minimize the risk of unintended</li> </ol>	<p>No less than 10 days prior to start of any Project-related ground disturbance activities, the Project owner shall provide the CPM with the final version of a Weed Management Plan that has been reviewed by BLM and Energy Commission staff. Modifications to the approved Weed Control Plan shall be made only with approval from the CPM in consultation with BLM.</p> <p>Within 30 days after completion of Project construction, the Project owner shall provide to the CPM for review and approval, a written report identifying which items of the Weed Management Plan have been completed, a summary of all modifications to mitigation measures made during the</p>	CEC

## APPLICANT PROPOSED MEASURES

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<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>harm to wildlife and other plants from weed control activities; monitoring and surveying methods; and reporting requirements. Weed control described in the Plan shall focus on prevention, early detection of new infestations, and early eradication for the life of the Project. Weed control along the Project linears shall be limited to the areas where soils were disturbed during construction. Weed monitoring shall occur a minimum of once per year during the early spring months (March-April) to detect seedlings before they set seed. The focus of the Plan shall be on avoiding the introduction of new invasive weeds or the spread of highly invasive species, such as Sahara mustard. Non-native species with low ecological risk, or that are very widespread, such as Mediterranean grass, shall be noted but control shall not be required. When detected, infestations of high priority species shall be eradicated immediately.</p> <p>2. <b>Avoidance and Treatment of Dense Weed Populations.</b> The Plan shall include a requirement to flag and avoid dense populations of the most invasive non-native weeds during any Project-related construction operation in or adjacent to infestations. If these areas cannot be avoided, they shall be pre-treated by one of the following methods: a) treating the infested areas in the season prior to construction by removing and properly disposing of seed heads by hand, prior to maturity, or spraying the new crop of plants that emerge in early spring, the season prior to construction, to reduce the viable seed contained in the soil, or b) removing and disposing the upper 2 inches of soil and disposing it offsite at a sanitary landfill or other site approved by the County Agricultural Commissioner, or burying the infested soil, e.g., under the solar facility or in a pit, and covering the infested soil with at least three feet of uncontaminated soil.</p> <p>3. <b>Cleaning Vehicles and Equipment.</b> The Plan shall include specifications and requirements for the cleaning and removal of weed seed and weed plant parts from vehicles and equipment involved in Project-related construction and operation. Vehicles and equipment working in weed-infested areas (including previous job sites) shall be required to clean the equipment tires, tracks, and undercarriage <i>before</i> entering the Project area and before moving to infested areas of the Project Disturbance Area to uninfested areas. Cleaning shall be conducted on all track and bucket/blade components to adequately remove all visible dirt and plant debris. Cleaning using hand tools, such as brushes, brooms, rakes, or shovels, is preferred. If water must be used, the water/slurry shall be contained to prevent seeds and plant parts from washing into adjacent habitat.</p> <p>4. <b>Safe Use of Herbicides.</b> The final Plan shall include detailed specifications for avoiding herbicide and soil stabilizer drift, and shall include a list of herbicides and soil stabilizers that will be used on the Project with manufacturer's guidance on appropriate use. The Plan shall indicate where the herbicides will be used, and what techniques will be used to avoid chemical drift or residual toxicity to special-status species and their pollinators, and consistent with the Nature Conservancy guidelines and the criteria under #2, below. Only weed control measures for target weeds with a demonstrated record of success shall be used, based on the best available information from sources such as The Nature Conservancy's The Global Invasive Species Team, California Invasive Plant Council: <a href="http://www.cal-ipc.org/ip/management/plant_profiles/index.php">http://www.cal-ipc.org/ip/management/plant_profiles/index.php</a>, and the California Department of Food &amp; Agriculture Encycloweed: <a href="http://www.cdffa.ca.gov/phpps/ipc/encycloweed/encycloweed_h_p.htm">http://www.cdffa.ca.gov/phpps/ipc/encycloweed/encycloweed_h_p.htm</a>.</p> <p>5. The methods for weed control described in the final Plan shall meet the following criteria:</p> <p>a. Manual: Well-timed removal of plants or seed heads with hand tools; seed heads and plants must be disposed of in accordance with guidelines from the Riverside County Agricultural Commissioner.</p> <p>b. Chemical: Herbicides known to have residual toxicity, such as pre-emergents and pellets, shall not be used in natural areas or within the engineered channels. Only the following application methods may be used: wick (wiping onto leaves); inner bark injection; cut stump; frill or hack and squirt (into cuts in the trunk); basal bark girdling; foliar spot spraying with backpack sprayers or pump sprayers at low pressure or with a shield attachment to control drift, and only on windless days, or with a squeeze bottle for small infestations (see Nature Conservancy guidelines described above);</p>	<p>Project's construction phase, and which items are still outstanding.</p> <p>As part of the Annual Compliance Report, each year following construction the Designated Biologist shall provide a report to the CPM and BLM that includes: a summary of the results of noxious weeds surveys and management activities for the year; a discussion of whether weed management goals for the year were met; and recommendations for weed management activities for the upcoming year.</p>	

## APPLICANT PROPOSED MEASURES

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<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>c. Biological: Biological methods may be used subject to review and approval by CDFG and USFWS and only if approved for such use by CDFA, and are either locally native species or have no demonstrated threat of naturalizing or hybridizing with native species;</p> <p>d. Mechanical: Disking, tilling, and mechanical mowers or other heavy equipment shall not be employed in natural areas but hand weed trimmers (electric or gas-powered) may be used. Mechanical trimmers shall not be used during periods of high fire risk and shall only be used with implementation of fire prevention measures.</p>		
<p><b>BIO-15, Pre-Construction Nest Surveys and Avoidance Measures:</b> Pre-construction nest surveys shall be conducted if construction activities would occur from February 1 through July 31. The Designated Biologist or Biological Monitor conducting the surveys shall be experienced bird surveyors familiar with standard nest-locating techniques such as those described in Martin and Guepel (1993). The goal of the nesting surveys shall be to identify the general location of the nest sites, sufficient to establish a protective buffer zone around the potential nest site, and need not include identification of the precise nest locations. Surveyors performing nest surveys shall not concurrently be conducting desert tortoise surveys. The bird surveyors shall perform surveys in accordance with the following guidelines:</p> <ol style="list-style-type: none"> <li>1. Surveys shall cover all potential nesting habitat in areas that could be disturbed by each phase of construction, as described in <b>BIO-29</b> (Phasing). Surveys shall also include areas within 500 feet of the boundaries of the active construction areas (including linear facilities);</li> <li>2. At least two pre-construction surveys shall be conducted, separated by a minimum 10-day interval. One of the surveys shall be conducted within the 14-day period preceding initiation of construction activity. Additional follow-up surveys may be required if periods of construction inactivity exceed three weeks, an interval during which birds may establish a nesting territory and initiate egg laying and incubation;</li> <li>3. If active nests or suspected active nests are detected during the survey, a buffer zone (protected area surrounding the nest, the size of which is to be determined by the Designated Biologist in consultation with CDFG) and monitoring plan shall be developed. Nest locations shall be mapped and submitted, along with a report stating the survey results, to the CPM; and</li> <li>4. The Designated Biologist or Biological Monitor shall monitor the nest until he or she determines that nestlings have fledged and dispersed; activities that might, in the opinion of the Designated Biologist, disturb nesting activities, shall be prohibited within the buffer zone until such a determination is made.</li> </ol>	<p>At least 10 days prior to the start of any Project-related ground disturbance activities during the nesting season, the Project owner shall provide the CPM a letter-report describing the findings of the pre-construction nest surveys, including the time, date, and duration of the survey; identity and qualifications of the surveyor (s); and a list of species observed. If active or suspected active nests are detected during the survey, the report shall include a map or aerial photo identifying the location or suspected location of the nest and shall depict the boundaries of the no-disturbance buffer zone around the nest(s) that would be avoided during Project construction.</p> <p>Each year during construction as part of the annual compliance report a follow-up report shall be provided to the CPM, BLM, CDFG, and USFWS describing the success of the buffer zones in preventing disturbance to nesting activity and a brief description of the outcome of the nesting effort (for example, whether young were successfully fledged from the nest or if the nest failed).</p>	CEC
<b>BIO-16, Avian Protection Plan</b>		CEC
<p><b>BIO-16A, Avian and Bat Habitat Compensation:</b> To mitigate for potential avian and bat impacts, the Project owner shall provide compensatory mitigation prior to commercial operation of the first unit for 3,896 acres, adjusted to reflect the final Project footprint. For purposes of this condition, the Project footprint means all lands disturbed in the construction and operation of the PSEGS, including all Project linears, as well as undeveloped areas inside the Project's boundaries that will no longer provide viable long-term habitat for avian and bat species. To satisfy this condition, the Project owner shall acquire, protect and transfer 1 acre of habitat for every acre of habitat within the final Project footprint, and provide associated funding for the acquired lands, as specified below. Condition BIO-28 may provide the Project owner with another option for satisfying some or all of the requirements in this condition. In lieu of acquiring lands itself, the Project</p>	<p>If the mitigation actions required under this condition are not completed prior to commercial operation of the first unit, the Project owner shall provide the CPM and CDFW with an approved form of Security in accordance with this condition of certification no later than 30 days prior to commercial operation of the first unit. Actual Security shall be provided no later than 7 days prior to commercial operation of the first unit. If Security is provided, the Project owner, or an</p>	

## APPLICANT PROPOSED MEASURES

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<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>owner may satisfy the requirements of this condition by depositing funds into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF), as provided below in section 3.i. of this condition.</p> <p>The timing of the mitigation shall correspond with commercial operation of the first unit. If compensation lands are acquired in fee title or in easement, the requirements for acquisition, initial improvement and long-term management of compensation lands include all of the following:</p> <ol style="list-style-type: none"> <li><b>Selection Criteria for Compensation Lands.</b> The compensation lands selected for acquisition in fee title or in easement shall: <ol style="list-style-type: none"> <li>be reasonably biologically comparable to the habitat lost or degraded by the Project footprint to assist in the conservation and enhancement of avian and bat populations in the vicinity of the project and throughout the region;</li> <li>be prioritized near larger blocks of lands that are either already protected or planned for protection, such as DWMAs within the Colorado Desert Recovery Unit, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;</li> <li>not have a history of intensive recreational use or other disturbance that does not have the capacity to regenerate naturally when disturbances are removed or might make habitat recovery and restoration infeasible;</li> <li>not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;</li> <li>not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and</li> <li>have water and mineral rights included as part of the acquisition, unless the CPM, in consultation with CDFW, BLM and USFWS, agrees in writing to the acceptability of the land.</li> </ol> </li> <li><b>Review and Approval of Compensation Lands Prior to Acquisition.</b> The Project owner shall submit a formal acquisition proposal to the CPM, CDFW and BLM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for avian and bat species in relation to the criteria listed above. Approval from the CPM and CDFW, in consultation with BLM and USFWS, shall be required for acquisition of all compensatory mitigation parcels.</li> <li><b>Compensation Lands Acquisition Requirements.</b> The Project owner shall comply with the following requirements relating to acquisition of the compensation lands after the CPM and CDFW, in consultation with BLM and USFWS, have approved the proposed compensation lands: <ol style="list-style-type: none"> <li><i>Preliminary Report.</i> The Project owner, or approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the CPM and CDFW. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM and CDFW, in consultation with BLM and the USFWS. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission and the Wildlife Conservation Board.</li> </ol> </li> </ol>	<p>approved third party, shall complete and provide written verification to the CPM, CDFW, BLM and USFWS of the compensation lands acquisition and transfer within 18 months after commercial operation of the first unit.</p> <p>The Project owner may elect to fund the acquisition and initial improvement of funds for that purpose into NFWF's REAT Account. Initial deposits for this purpose must be made in the same amounts as the Security required in section 3.h. of this condition. Payment of the initial funds for acquisition and initial improvement must be made at least 30 days prior to commercial operation of the first unit.</p> <p>No fewer than 90 days prior to acquisition of the property, the Project owner shall submit a formal acquisition proposal to the CPM, CDFW, USFWS, and BLM describing the parcels intended for purchase and shall obtain approval from the CPM prior to the acquisition.</p> <p>No fewer than 30 days after acquisition of the property the Project owner shall deposit the funds required by Section 3e above (long term management and maintenance fee) and provide proof of the deposit to the CPM.</p> <p>The Project owner, or an approved third party, shall provide the CPM, CDFW, BLM, and USFWS with a management plan for the compensation lands within 180 days of the land or easement purchase, as determined by the date on the title. The CPM shall review and approve the management plan for the compensatory mitigation lands, in consultation with CDFW, BLM and the USFWS.</p> <p>Within 90 days after completion of all project related ground disturbance, the Project owner shall provide to the CPM, CDFW, BLM and USFWS an analysis, based on aerial photography, with the final accounting of the amount of habitat disturbed during Project construction. This shall be the basis for the final number of acres required to be acquired.</p>	

## APPLICANT PROPOSED MEASURES

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<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>b. <i>Title/Conveyance.</i> The Project owner shall transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement as required by the CPM and CDFW. Transfer of either fee title or an approved conservation easement will usually be sufficient, but some situations, e.g., the donation of lands burdened by a conservation easement to BLM, will require that both types of transfers be completed. Any transfer of a conservation easement or fee title must be to CDFW, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to BLM under terms approved by the CPM and CDFW. If an approved non-profit organization holds title to the compensation lands, a conservation easement shall be recorded in favor of CDFW in a form approved by CDFW. If an approved non-profit holds a conservation easement, CDFW shall be named a third party beneficiary.</p> <p>c. <i>Initial Habitat Improvement Fund.</i> The Project owner shall fund the initial protection and habitat improvement of the compensation lands. Alternatively, a non-profit organization may hold the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965) and if it meets the approval of CDFW and the CPM. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee.</p> <p>d. <i>Property Analysis Record.</i> Upon identification of the compensation lands, the Project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate long-term maintenance and management fee to fund the in-perpetuity management of the acquired mitigation lands.</p> <p>e. <i>Long-term Maintenance and Management Fund.</i> In accordance with BIO-29 (phasing), the Project owner shall deposit in NFWF's REAT Account a capital long-term maintenance and management fee in the amount determined through the Property Analysis Record (PAR) or PAR-like analysis conducted for the compensation lands.</p> <p>The CPM, in consultation with CDFW, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity. If CDFW takes fee title to the compensation lands, CDFW shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for CDFW and with CDFW supervision.</p> <p>f. <i>Interest, Principal, and Pooling of Funds.</i> The Project owner, the CPM and CDFW shall ensure that an agreement is in place with the long-term maintenance and management fee holder/manager to ensure the following conditions:</p> <p>i. <i>Interest.</i> Interest generated from the initial capital long-term maintenance and management fee shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action approved by CDFW designed to protect or improve the habitat values of the compensation lands.</p> <p>ii. <i>Withdrawal of Principal.</i> The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by the CDFW or the approved third-party long-term maintenance of the species on the compensation lands. If CDFW takes fee title to the compensation lands, monies received by CDFW pursuant to this provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless CDFW designates NFWF or another entity to manage the long-term maintenance and management fee for CDFW.</p>		

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Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>iii. Pooling Long-Term Maintenance and Management Fee Funds. CDFW, or a CPM and CDFW-approved non-profit organization qualified to hold long-term maintenance and management fees solely for the purpose to manage lands in perpetuity, may pool the endowment with other endowments for the operation, management, and protection of the compensation lands for avian and bat species. However, for reporting purposes, the long-term maintenance and management fee fund must be tracked and reported individually to the CDFW and CPM.</p> <p>g. <i>Other expenses.</i> In addition to the costs listed above, the Project owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to title and document review costs, expenses incurred from other state agency reviews, and overhead related to providing compensation lands to CDFW or an approved third party; escrow fees or costs; environmental contaminants clearance; and other site cleanup measures.</p> <p>h. <i>Mitigation Security.</i> The Project owner shall provide financial assurances prior to commercial operation of the first unit to the CPM and CDFW with copies of the document(s) to BLM and the USFWS, to guarantee that an adequate level of funding is available to implement the mitigation measures described in this condition. These funds shall be used solely for implementation of the measures associated with the Project in the event the Project owner fails to comply with the requirements specified in this condition, or shall be returned to the Project owner upon successful compliance with the requirements in this condition. The CPM's or CDFW's use of the security to implement measures in this condition may not fully satisfy the Project owner's obligations under this condition. Financial assurance can be provided to the CPM and CDFW in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security"). Prior to submitting the Security to the CPM, the Project owner shall obtain the CPM's approval in consultation with CDFW, BLM and the USFWS, of the form of the Security. Security shall be in the amount shown in BIO-29, Table 3 (see 2010 CEC PSPP Commission Decision, p. 143, which would be updated to reflect current costs). The actual costs to comply with this condition will vary depending on the final footprint of the completed Project, and the actual costs of acquiring, improving and managing the compensation lands.</p> <p>i. <i>NFWF REAT Account.</i> The Project owner may elect to fund the acquisition and initial improvement of compensation lands through NFWF by depositing funds for that purpose into NFWF's REAT Account. Initial deposits for this purpose must be made in the same amounts as the security required in section 3.h. above, and may be provided in lieu of security. If this option is used for the acquisition and initial improvement, the Project owner shall make an additional deposit into the REAT Account if necessary to cover the actual acquisition costs and administrative costs and fees of the compensation land purchase once land is identified and the actual costs are known. If the actual costs for acquisition and administrative costs and fees are less than described in Biological Resources Table 6b (see 2010 CEC PSPP Revised Staff Assessment, Part II, pp. C.2-68 – C.2-72), the excess money deposited in the REAT Account shall be returned to the Project owner. Money deposited for the initial protection and improvement of the compensation lands shall not be returned to the Project owner.</p> <p>The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the Energy Commission and CDFW. Such delegation shall be subject to approval by the CPM and CDFW, in consultation with BLM and USFWS, prior to land acquisition, initial protection or maintenance and management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be implemented within 18 months of the Energy Commission's approval of the third party.</p>		

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p><b>BIO-16B, Avian Enhancement and Conservation Measures:</b> The Project owner shall implement the following measure to conserve and enhance avian populations in the vicinity of the project and throughout the region:</p> <p>(a) <b>Regional Avian Electrocutation Risk and Cable Collision Avoidance Measures.</b> Consistent with the DRECP framework (DRECP 2012), the project owner shall, prior to the commencement of commercial operations at the facility, fund the retrofitting of non-compliant utility poles in the vicinity of the project to APLIC (2006) standards or fund the installation of bird diverters in the vicinity of the Project. A total amount of \$300,000 will be provided for these enhancements. The funding shall be provided to an independent third party who will perform the actual retrofitting, pursuant to a Retrofit Plan approved by the CPM.</p> <p>The Retrofit Plan will develop a tiered approach to minimizing electrocution and collision risk, wherein the first funding is applied to retrofit poles in areas where either mortalities are highest or area use is highest. The second tier of retrofitted poles would be areas of lesser importance. If funds remain available after first and second tier poles have been retrofitted, then the CPM may apply the remaining funds to other avian protection objectives outlined by the DRECP. As an alternative to the Retrofitting Plan and the use of a CPM-approved third party, the total funding can be accomplished by making a payment in the amount of \$300,000 to the National Fish and Wildlife Foundation's Bald and Golden Eagle Protection Act account.</p> <p>(b) <b>Additional Migratory Bird Conservation:</b> The Project owner shall, prior to the commencement of commercial operations at the facility, pay \$500,000 to fund the activities of a CPM approved third party that will perform additional bird migratory bird conservation measures. Such measures shall be approved by the CPM and may include, but not be limited to: (i) restoration of degraded habitat with native vegetation; (ii) restoration of agricultural fields to bird habitat; (iii) management of agricultural fields to enhance bird populations; (iv) invasive plant species and artificial food or water source management; (v) control and cleanup of potential avian hazards, such as lead or microtrash; (vi) retrofitting of buildings to minimize collisions; (vii) retrofitting of conductors and above ground cables to minimize collisions; (viii) animal control programs; (ix) support for avian and bat research and/or management efforts conducted by entities approved by the CPM within the Project's mitigation lands or other approved locations; (x) funding efforts to address avian diseases or depredation due to the expansion of predators in response to anthropomorphic subsidies that may adversely affect birds that use the mitigation lands or in other approved locations; and (xi) contribute to the Migratory Bird Conservation Fund managed by the Migratory Bird Conservation Commission.</p>	<p>No later than 30 days prior to beginning of Project ground-disturbing activities, the Project owner shall provide written verification of an approved form of Security in accordance with this condition of certification. Actual Security shall be provided no later than 7 days prior to the beginning of Project ground-disturbing activities. Prior to commercial operation, the Project owner shall provide the funding to the independent third party selected by the CPM.</p>	
<p><b>BIO-16C, Avian and Bat Surveys, Monitoring and Adaptive Management:</b> The Project owner shall perform preconstruction baseline surveys prior to surface disturbance of avian and bat species for use in development of a Bird and Bat Conservation Strategy (BBCS). The Project owner shall prepare a BBCS and submit it to the CPM and BLM for approval and to CDFW and USFWS for review and comment. The BBCS shall provide for the following:</p> <ul style="list-style-type: none"> <li>Survey and monitor onsite and offsite avian use and behavior to document species composition on and offsite, compare onsite and offsite rates of avian and bat use, document changes in avian and bat use over time, and evaluate the general behavior of birds in and near the facility.</li> <li>Implement an onsite and offsite avian and bat mortality and injury monitoring program to identify the extent of potential avian or bat mortality or injury from collisions with facility structures or from elevated levels of solar flux that may be encountered within the facility airspace, including: <ul style="list-style-type: none"> <li>assessing levels of collision-related mortality and injury with heliostats, perimeter fences and power tower structures;</li> </ul> </li> </ul>	<p>The BBCS shall be submitted to the CPM for review and approval and to CDFW and USFWS for review and comment no less than 120 days prior to the commercial operation of the first unit. The Project owner shall provide the CPM with copies of any written or electronic transmittal from the USFWS or CDFW related to the BBCS within 30 days of receiving any such transmittal. Survey reports shall be submitted to the CPM after each season and in an annual summary report throughout the course of the three-year study period and as set forth in the approved monitoring study plan. The reports will include all monitoring data required as part of the monitoring program. Each year throughout the minimum three year monitoring period, the</p>	



## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<ul style="list-style-type: none"> <li>calculating rates of solar flux-related avian mortality and injury, if any;</li> <li>documenting seasonal, temporal, and weather-related patterns associated with collision- or solar flux-related mortality and injury; and</li> <li>documenting spatial patterns that may be associated with collision- or flux-related mortality and injury.</li> <li>documenting spatial patterns that may be associated with avoidance of the facility.</li> </ul> <ul style="list-style-type: none"> <li>Identify conservation measures to minimize impacts and evaluate the effectiveness of those measures</li> <li>Implement an adaptive management and decision-making framework for reviewing, characterizing, and responding to quantitative survey and monitoring results.</li> </ul> <p><b>Preconstruction Baseline Surveys</b></p> <p>The project owner shall perform avian use and behavior surveys of the facility site prior to construction. Surveys of avian use and behavior shall be conducted using standard point count protocols. The objective of the surveys shall be to estimate the spatial and temporal use of the facility and surrounding area by resident and migrating birds and to document the preconstruction avian community.</p> <p>The preconstruction baseline surveys will include, at least:</p> <ul style="list-style-type: none"> <li>Species present, by season, including migration, nesting wintering</li> <li>Abundance by unit effort, unit time, or other acceptable metric of abundance, by season</li> <li>Use of the project area and that portion of the surrounding area in which indirect effects could occur (species-specific).</li> </ul> <p>The surveys will be sufficiently robust in design, including but not limited to, sampling schedule, sampling intervals, replicates, spatial layout, seasonal and annual variability, and statistics. All surveys will be project-relevant; data collection that is immaterial to baseline survey objectives and goals will not be included. Preconstruction surveys shall employ the following methods:</p> <p>Diurnally active and nesting avian surveys will be conducted using accepted, standard point count protocols (e.g., BLM 2009, Ralph et al. 1995, Ralph et al 1993, Smith et al. 1998) to identify seasonal and annual raptor and songbird species composition, rates of use (including nesting), types of use, and changes in use over time. The spatial design will include the entire area of effect, plus control areas, and employ a stratified-random approach to ensure sampling of all biologically relevant factors and project impacts. The first stratum will be biologically relevant features, such as proximity to vegetation types that may affect prey abundance and capture probability. The second stratum will attend to the specific aspects of the power towers and solar field, as well as the interface between the solar field and native habitat. To ensure entire area of effect coverage, a grid will overlay the entire project footprint and extended area of effect around the project disturbance area. Within these three strata, a sufficient number of transects (replicates) will be randomly sited to provide robust statistical results. Ten percent of the area is a suggested level of sampling that would provide sufficient information to answer the study questions as well as provide a basis to assess future sampling during the monitoring phase (see below). Point count locations would be spaced 500 ft apart along each transect. Each solar field has a radius of approximately one mile. Because the study would extend to indirect-effect areas outside the boundary, this design would result in 10, 1.25 to 1.5-mile-long transects (depending on access outside the project) for</p>	<p>Designated Biologist or other qualified biologist that may be identified by the Designated Biologist shall submit an Annual Report to the CPM, CDFW and USFWS by January 31 of each calendar year, summarizing all available bird and bat mortality data (species, date and location collected, evidence of injury and cause of death) collected over the course of the year. The report also shall summarize any additional wildlife mortality or injury documented on the project site during the year, regardless of cause, and assess any adaptive management measure implemented during the prior year as approved by the CPM. After the third year of the monitoring program, the CPM shall meet and confer with the project owner to determine of the study period should be extended based on data quality and sufficiency for analysis or if needed to document efficacy of any adaptive management measures undertaken by the Project owner. The study period may be extended up to five years from the commencement of facility operations. If a carcass of a golden eagle or any state or federally listed threatened or endangered species is found at any time by the monitoring study or Project operations staff, the Project owner, Designated Biologist, or other qualified biologist that may be identified by the Designated Biologist shall contact CDFW and USFWS by email, fax or other electronic means within one working day of any such detection.</p>	

## APPLICANT PROPOSED MEASURES

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<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>the both solar fields combined, five per solar field, with 15 sampling points per transect. Point counts would be 10 minutes long at each point and conducted during the greatest bird activity period – daybreak to approximately three hours past daybreak. Survey points will also include two-hour segments throughout the middle portion of the day (approximately 1000 h to 1600 h, depending on time of year) when diurnal raptors are generally considered most active. The surveys will be conducted weekly during the most intensive spring nesting and migration period (March 1 to May 1), twice monthly during the remainder of spring (May and June) and during fall (September 1 to December 1) and once per month during summer (June 1 to September 1) and winter (December 1 to February 1). Sampling will be rotated so that all points are evaluated equally throughout each sampling period.</p> <p>Nocturnal sampling will be conducted for nocturnally migrating birds during the spring and fall migration periods to assess the level of migratory activity and need for further nocturnal sampling. Bat acoustic sampling also will be implemented in this baseline stage to identify species present and assess risk potential.</p> <p>The survey will occur for one year prior to construction. If construction schedules dictate that an entire year of sampling is not possible, then at least one important migratory and activity season will be captured, preferably spring.</p> <p>Preconstruction surveys shall include collecting data from the spring migratory and activity season.</p> <p><b>BBCS Components</b></p> <p>The BBCS shall include the following components to be implemented after commercial operation of the Project:</p> <ol style="list-style-type: none"> <li>1. Preconstruction Baseline survey results. A description and summary of the baseline survey methods and results.</li> <li>2. Avian and bat use and behavior surveys. Avian and bat use behavior surveys shall be conducted. The program will outline survey methodology and field documentation, the identification of appropriate onsite and offsite survey locations, control sites, and the seasonal considerations. Prey abundance surveys will also be conducted to identify the locations and changes in the abundance of prey species. Bat acoustic sampling may be implemented depending on results of the baseline study.</li> <li>3. Golden eagle nest monitoring, including a summary of available information concerning golden eagle nesting activity in the project vicinity shall be prepared and annual pedestrian and/or helicopter surveys of golden eagle nesting sites within a 10-mile radius of the Project site</li> <li>4. Avian and bat mortality and injury monitoring: An avian and bat injury and mortality monitoring program shall be implemented, including: <ol style="list-style-type: none"> <li>(a) Onsite monitoring that will systematically survey representative locations within the facility sufficient to ensure that the estimated coefficient of variation (the standard deviation divided by facility-wide estimates) of facility wide fatality estimates will be less than 25 percent over a reasonable range of potentially low, medium and high impact rates, account for potential spatial bias and allow for the extrapolation of survey results to unsurveyed areas, and the survey interval based on scavenger and searcher efficiency trials and detection rates.</li> <li>(b) Offsite monitoring, to the extent that access can be reasonably and feasibly obtained by the Project owner, of one or more locations adjacent to the project facilities using the same or comparable methods as implemented for the onsite monitoring to monitor the extent to which avian species potentially injured by collisions or solar flux traverse to and can be detected within adjacent areas.</li> </ol> </li> </ol>		

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>(c) Low-visibility and high-wind weather event monitoring to document potential weather-related collision risks that may be associated with the power towers at the facility, including foggy, highly overcast, or rainy night-time weather typically associated with an advancing frontal system, and high wind events in which 40 miles per hour winds are sustained for period of greater than 4 hours, including survey frequency, location and methods.</p> <p>(d) Scavenger and searcher efficiency trials to document the extent to which avian or bat fatalities remain visible over time and can be detected within the project area and to adjust the survey timing and survey results to reflect scavenger and searcher efficiency rates.</p> <p>(e) Statistical methods used to generate facility estimates of potential avian and bat impacts based on the observed number of detections during standardized searches in the monitoring season for which the cause of death can be determined and is determined to have been facility-related.</p> <p>(f) Field detection and mortality or injury identification, cause attribution, handling and reporting protocols consistent with applicable legal requirements.</p> <p>5. Survey schedule and period. All surveys and monitoring studies included in the BBCS shall be conducted for three years following commercial operation and approval of the BBCS by the CPM. At the end of the three-year period, the project owner and the CPM shall meet and confer to determine whether the survey program shall be continued for subsequent periods, up to a maximum of five years. The monitoring program may be modified with the approval of the CPM in response to survey results, identified scavenging efficiency rates, or other factors to increase monitoring accuracy and reliability or in accordance with the adaptive management decision-making framework included in the BBCS.</p> <p>6. Adaptive management. An adaptive management program shall be developed to identify and implement reasonable and feasible measures that would reduce any biologically significant detected levels of avian or bat mortality or injury attributable to project operations and facilities. Any such impact reduction measures must be commensurate (in terms of factors that include geographic scope, costs, and scale of effort) to the level of avian or bat mortality or injury that is specifically and clearly attributable to the Project facilities. The adaptive management program shall include the following element:</p> <p>(a) Reasonable measures for characterizing the extent and significance of detected mortality and injuries clearly attributable to the Project facilities.</p> <p>(b) Measures that the project owner will implement to adaptively respond to detected mortality and injuries attributable to the Project, including passive avian diverter installations along the perimeter or at other locations within the project to avoid site use, the use of sound, light or other means to discourage site use consistent with applicable legal requirements, onsite prey or habitat control measures consistent with applicable legal requirements, and additional perch and nest proofing of Project facilities.</p> <p>(c) A decision-making framework that facilitates concurrent Project owner, CPM, and state and federal wildlife agency review of seasonal and annual survey results, the effectiveness of the adaptive management measures implemented by the Project owner, modification of the surveys in response to the results, if necessary, and the identification of additional mitigation responses that are commensurate with the extent of impacts that may be identified in the monitoring studies.</p>		

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p><b>BIO-17, American Badger and Desert Kit Fox Impact Avoidance and Minimization Measures:</b> The project owner shall develop and implement an American Badger and Desert Kit Fox Mitigation and Monitoring Plan (plan). The objective of the plan shall be to avoid direct impacts to the American badger and desert kit fox as a result of construction of the power plant and linear facilities, as well as during project operation and decommissioning. The final plan is subject to review and comment by BLM and revision and approval by the CPM, in consultation with CDFW. The final plan shall include, but is not limited to, the following procedures and impact avoidance measures:</p> <ol style="list-style-type: none"> <li>1. Describe pre-construction survey and clearance field protocol, to determine the number and locations of single or paired kit foxes or badgers on the project site that would need to be passively relocated and the number and locations of desert kit fox or badger burrows or burrow complexes that would need to be collapsed to prevent re-occupancy by the animals.</li> <li>2. Complete pre-construction den surveys for any new construction activity. Biological Monitors shall perform pre-construction surveys for badgers and kit fox dens in the Project area, including areas within 100 feet of all Project facilities, utility corridors, and access roads. Surveys may be concurrent with desert tortoise surveys. If dens are detected, each den shall be classified as inactive non-natal, inactive natal, potentially active, or definitely active non-natal, or active natal den.</li> <li>3. The plan will include details on monitoring requirements, types and methods of passive hazing, and methods and timing of den excavation, including, but not limited to the following: <ol style="list-style-type: none"> <li>a. Inactive non-natal and inactive natal dens that would be directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse by badgers or kit fox</li> <li>b. Potentially and definitely active dens that would be directly impacted by construction activities shall be monitored by the Biological Monitor for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance. If no tracks are observed in the tracking medium or no photos of the target species are captured after three nights, the den shall be excavated and backfilled by hand. If tracks are observed, the den shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage the badger or kit fox from continued use. After verification that the den is unoccupied it shall then be excavated and backfilled by hand to ensure that no badgers or kit fox are trapped in the den. BLM approval may be required prior to release of badgers on public lands.</li> <li>c. <i>Active natal dens.</i> During denning season (American badger – March to August, and desert kit fox – February to June), any active natal dens that are detected in the preconstruction surveys shall have a buffer zone of 300 feet to 500 feet surrounding the den, pending approval from the CPM in consultation with CDFW, and monitoring measures shall be implemented. Discovery of an active natal den that could be impacted by the project shall be reported to the CPM and CDFW within 24-hours of the discovery. A detailed description outlining the types and methods of monitoring must be included in the plan. The den location shall be mapped and submitted along with a report stating the survey results to the CPM and CDFW. The Designated Biologist shall monitor the natal den until he or she determines that the pups have dispersed. No disturbance will be allowed for any animal associated with a natal den and any activities that might disturb denning activities shall be prohibited within the buffer zone. Once the pups have dispersed, various passive hazing methods may be used to discourage den reuse. A detailed description of the types of passive hazing to be used must be included in the plan; however, approval must be granted by the CPM, in consultation with CDFW prior to implementation. After verification that the den is unoccupied, it shall then be excavated by hand and backfilled to ensure that, no badgers or kit fox are trapped in the den.</li> </ol> </li> </ol>	<p>No fewer than 30 days prior to the start of any construction-related ground disturbance activities associated with the new project related facilities, the project owner shall provide the CPM, BLM, and CDFW with a draft American Badger and Desert Kit Fox Mitigation and Monitoring Plan for review and comment.</p> <p>No fewer than 10 days prior to start of any ground disturbance activities associated with the new project-related facilities, the project owner shall provide an electronic copy of the CPM-approved final plan to the CPM and CDFW and implement the plan.</p> <p>The project owner shall submit a report to the CPM and CDFW within 30 days of completion of any badger and kit fox surveys. The report shall describe survey methods, results, impact avoidance and minimization measures implemented, and the results of those measures.</p> <p>No later than 2 days following a phone notification of an injured, sick, or dead American badger or desert kit fox, the project owner shall provide to the CPM and CDFW, via FAX or electronic communication, a written report from the Designated Biologist describing the incident of sickness, injury, or death of an American badger or desert kit fox, when the incident occurred, and who else was notified.</p> <p>Beginning with the first month after start of construction and continuing every month until construction is completed, the Designated Biologist shall include a summary of events regarding the American badger and desert kit fox in each MCR.</p> <p>No later than 45 days after initiation of project operation, the Designated Biologist shall provide the CPM a final American Badger and Desert Kit Fox Mitigation and Monitoring Plan that includes: 1) a discussion of all mitigation measures that were and currently are being implemented; 2) all information about project-related kit fox and badger injuries and/or deaths; 3) all information regarding sick kit fox and badger found within the project site and along related linear facilities; and 4) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future projects on the American badger and desert kit fox.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>d. <i>Exception for American badger.</i> In the event that passive relocation techniques fail for badgers outside the denning season, or during the denning season individual badgers can be verified to not have a litter, then live-trapping can be employed to safely perform active removal. This approach will be agreed to, in principle, ahead of clearance surveys, and refined for individual situations in discussions with the CPM and CDFW.</p> <p>4. Address other factors and procedures that may affect the success of kit fox and American badger relocation offsite, such as:</p> <ul style="list-style-type: none"> <li>a. Qualitative discussion of availability of suitable habitat on off-site surrounding lands within 10 miles of the project boundary, and quantitative evaluation of unoccupied desert kit fox burrows available on surrounding lands within 1 mile of the project boundary (e.g., by inventorying burrow numbers in selected representative sample areas);</li> <li>b. Estimates of the distances kit foxes would need to travel across the project site and across adjacent lands to safely access suitable habitat (including burrows) off-site;</li> <li>c. Proposed scheduling of the passive relocation effort;</li> <li>d. Methods to minimize likelihood that the animals will return to the project site;</li> <li>e. Descriptions of any proposed or potential ground disturbing activities related to kit fox relocation, and locations of those activities (e.g., artificial burrow construction);</li> <li>f. A monitoring and reporting plan to evaluate success of the relocation efforts and any subsequent re-occupation of the project site; and</li> <li>g. A plan to subsequently relocate any animals that may return to the site (e.g., by digging beneath fences).</li> </ul> <p>5. Notify the CPM and CDFW if injured, sick, or dead American badger and desert kit fox are found. If an injured, sick, or dead animal is detected on any area associated with the solar project site or associated linear facilities, the CPM and the Ontario CDFW Office shall be notified immediately by phone. Written follow-up notification via FAX or electronic communication shall be submitted to the CPM and CDFW within 24 hours of the incident and shall include the following information as appropriate:</p> <ul style="list-style-type: none"> <li>a. <i>Injured animals.</i> If an American badger or desert kit fox is injured because of any project-related activities, the Designated Biologist or approved Biological Monitor shall immediately notify the CPM and CDFW personnel regarding the capture and transport of the animal to CDFW-approved wildlife rehabilitation and/or veterinarian clinic. Following the phone notification, the CPM and CDFW shall determine the final disposition of the injured animal, if it recovers. A written notification of the incident shall be sent to the CPM and CDFW containing, at a minimum, the date, time, location, and circumstances of the incident.</li> <li>b. <i>Sick animals.</i> If an American badger or desert kit fox is found sick and incapacitated on any area associated with the solar project site or associated linear facilities, the Designated Biologist or approved Biological Monitor shall immediately notify the CPM and CDFW personnel for immediate capture and transport of the animal to a CDFW-approved wildlife rehabilitation and/or veterinarian clinic. Following the phone notification, the CPM and CDFW shall determine the final disposition of the sick animal, if it recovers. If the animal dies, a necropsy shall be performed by a CDFW-approved facility to determine the cause of death. The project owner shall pay to have the animal transported and a necropsy performed. A written notification of the incident shall be sent to the CPM and CDFW and contain, at a minimum, the date, time, location, and circumstances of the incident.</li> </ul>		

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>c. <i>Fatalities.</i> If an American badger or desert kit fox is killed because of any project-related activities during construction, operation, and decommissioning, or is found dead on the project site or along associated linear facilities, the Designated Biologist or approved Biological Monitor shall immediately refrigerate the carcass and notify the CPM and CDFW personnel within 24 hours of the discovery to receive further instructions on the handling of the animal. If the animal is suspected of dying of unknown causes, a necropsy shall be performed by a CDFW-approved facility to determine the cause of death. The project owner shall pay to have the animal transported and a necropsy performed.</p> <p>6. Additional protection measures to be included in the plan and implemented:</p> <p>a. All pipes within the project disturbance area must be capped and/or covered every evening or when not in use to prevent desert kit foxes or other animals from accessing the pipes.</p> <p>b. All water sources shall be covered and secured when not in use to prevent drowning.</p> <p>c. The project owner shall coordinate with CDFW to identify any additional fence design features to maximize the effectiveness of the fence to exclude kit foxes from the project.</p> <p>d. Incorporate and implement the CDFW Veterinarian's guidance regarding impact avoidance measures including measures to prevent disease spread among desert kit foxes.</p> <p>e. Include measures to reduce traffic impacts to wildlife if the project owner anticipates night-time construction. The plan must also include a discussion of what information will be provided to all night-time workers, including truck drivers, to educate them about the threats to kit fox, what they need to do to avoid impacts to kit fox, and what to report if they see a live, injured, or dead kit fox.</p>		
<p><b>BIO-18, Burrowing Owl Impact Avoidance, Minimization, and Compensation Measures:</b> The Project owner shall implement the following measures to avoid, minimize and offset impacts to burrowing owls:</p> <p>1. Pre-Construction Surveys. The Designated Biologist or Biological Monitor shall conduct pre-construction surveys for burrowing owls no more than 30 days prior to initiation of construction activities. Surveys shall be focused exclusively on detecting burrowing owls, and shall be conducted from two hours before sunset to 1 hour after or from 1 hour before to 2 hours after sunrise. The survey area shall include the Project Disturbance Area and surrounding 500 foot survey buffer for each phase of construction in accordance with <b>BIO-29</b> (phasing).</p> <p>2. Implement Burrowing Owl Mitigation Plan. The Project owner shall implement measures described in the final Burrowing Owl Mitigation Plan. The final Burrowing Owl Mitigation Plan shall be approved by the CPM, in consultation with BLM, USFWS and CDFG, and shall:</p> <p>a. identify suitable sites within 1 mile of the Project Disturbance Areas for creation or enhancement of burrows prior to passive relocation efforts;</p> <p>b. provide guidelines for creation or enhancement of at least two natural or artificial burrows per relocated owl;</p> <p>c. provide detailed methods and guidance for passive relocation of burrowing owls occurring within the Project Disturbance Area; and</p> <p>d. describe monitoring and management of the passive relocation effort, including the created or enhanced burrow location and the project area where burrowing owls were relocated from, and provide a reporting plan.</p>	<p>If pre-construction surveys detect burrowing owls within the Project Disturbance Area and relocation of the owls is required, within 30 days of completion of the burrowing owl pre-construction surveys the Project owner shall submit to the CPM, BLM, CDFG, and USFWS a Burrowing Owl Mitigation Plan. The Burrowing Owl Mitigation Plan shall identify suitable areas for construction of burrows and the other passive relocation as described above. As part of the Annual Compliance Report each year following construction for a period of five years, the Designated Biologist shall provide a report to the CPM, BLM, USFWS and CDFG that describes the results of monitoring and management of the burrowing owl burrow creation or enhancement area(s).</p> <p>If pre-construction surveys detect burrowing owls within 500 feet of proposed construction activities, at least 10 days prior to the start of any Project-related site disturbance activities the Designated Biologist shall provide to the CPM, BLM, CDFG, and USFWS documentation indicating that non-disturbance buffer fencing has been installed as described above. The Project owner shall report monthly to</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>3. Implement Avoidance Measures. If an active burrowing owl burrow is detected within 500 feet from the Project Disturbance Area the following avoidance and minimization measures shall be implemented:</p> <p>a. Establish Non-Disturbance Buffer. Fencing shall be installed at a 250-foot radius from the occupied burrow to create a non-disturbance buffer around the burrow. The non-disturbance buffer and fence line may be reduced to 160 feet if all Project-related activities that might disturb burrowing owls would be conducted during the non-breeding season (September 1 through January 31). Signs shall be posted in English and Spanish at the fence line indicating no entry or disturbance is permitted within the fenced buffer.</p> <p>b. Monitoring: If construction activities would occur within 500 feet of the occupied burrow during the nesting season (February 1 – August 31) the Designated Biologist or Biological Monitor shall monitor to determine if these activities have potential to adversely affect nesting efforts, and shall make recommendations to minimize or avoid such disturbance.</p> <p>4. Acquire Burrowing Owl Habitat. The Project owner shall acquire, in fee or in easement land suitable to support a resident population of burrowing owls and shall provide funding for the enhancement and long-term management of these compensation lands. The responsibilities for acquisition and management of the compensation lands may be delegated by written agreement to CDFG or to a third party, such as a non-governmental organization dedicated to habitat conservation, subject to approval by the CPM, in consultation with CDFG and USFWS prior to land acquisition or management activities. Additional funds shall be based on the adjusted market value of compensation lands at the time of construction to acquire and manage habitat.</p> <p>a. Criteria for Burrowing Owl Mitigation Lands. The terms and conditions of this acquisition or easement shall be as described in <b>BIO-12</b> [Desert Tortoise Compensatory Mitigation], with the additional criteria to include: 1) mitigation land per <b>BIO-29 - Table 2</b> (see 2010 CEC PSPP Commission Decision, pp. 142 – 143), that must provide suitable habitat for burrowing owls, and 2) the acquisition lands must either currently support burrowing owls or be within dispersal distance from areas occupied by burrowing owls (generally approximately five miles). The burrowing owl mitigation lands may be included with the desert tortoise mitigation lands ONLY if these two burrowing owl criteria are met. If the burrowing owl mitigation land is separate from the acreage required for desert tortoise compensation lands, the Project owner shall fulfill the requirements described below in this condition.</p> <p>b. Security. If the burrowing owl mitigation land is separate from the acreage required for desert tortoise compensation lands the Project owner or an approved third party shall complete acquisition of the proposed compensation lands within the time period specified for this acquisition (see the verification section at the end of this condition). Alternatively, financial assurance can be provided by the Project owner to the CPM and CDFG, according to the measures outlined in <b>BIO-12</b>. The amount of the Security shall be as described in <b>BIO-29 – Table 3</b> (see 2010 CEC PSPP Commission Decision, p. 143, which would be updated to reflect current costs) for the proposed Project or any of the Project alternatives. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security (“Security”) prior to initiating ground-disturbing Project activities. Prior to submittal to the CPM, the Security shall be approved by the CPM, in consultation with CDFG and the USFWS to ensure funding. The final amount due will be determined by an updated appraisal and PAR analysis conducted as described in <b>BIO-12</b>.</p>	<p>the CPM, BLM, CDFG and USFWS for the duration of construction on the implementation of burrowing owl avoidance and minimization measures. Within 30 days after completion of construction the Project owner shall provide to the CPM and CDFG a written report identifying how mitigation measures described in the plan have been completed.</p> <p>No less than 30 days prior to the start of Project ground-disturbing activities the Project owner shall provide the CPM with an approved form of Security in accordance with this condition of certification. Actual Security for acquisition of 78 acres of burrowing owl habitat shall be provided no later than 7 days prior to the beginning of Project ground-disturbing activities.</p> <p>No fewer than 90 days prior to the land or easement purchase, as determined by the date on the title, the Project owner shall provide the CPM with a management plan for review and approval, in consultation with CDFG, BLM, and USFWS, for the compensation lands and associated funds.</p> <p>No later than 18 months from initiation of construction, the Project owner shall provide written verification to the CPM that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient.</p>	

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p><b>BIO-19, Special-Status Plant Impact Avoidance, Minimization and Compensation:</b> This condition contains the following four sections:</p> <p><b>Section A: Special-Status Plant Impact Avoidance and Minimization Measures</b> contains the Best Management Practices and other measures designed to avoid accidental indirect impacts to plants during construction, operation, and closure. The measures are required for special-status plants located outside of the Project Disturbance Area and within 100 feet of the Project Disturbance Area. The same measures shall also be implemented for plants within the Project Disturbance Area that are avoided pursuant to Section C of this condition.</p> <p><b>Section B: Conduct Late Season Botanical Surveys</b> describes guidelines for conducting summer-fall 2010 surveys to detect special-status plants that would have been missed during the spring 2010 surveys.</p> <p><b>Section C: Avoidance Requirements for Special-Status Plants Detected in the Summer/Fall 2010 Surveys</b> outlines the level of on-site avoidance required for any special-status plants detected during the summer-fall surveys, and specifies when off-site mitigation is required.</p> <p><b>Section D: Off-Site Compensatory Mitigation for Special-Status Plants</b> describes performance standards for off-site mitigation through acquisition or restoration/enhancement.</p> <p>“Project Disturbance Area” encompasses all areas to be temporarily and permanently disturbed by the Project, including the plant site, linear facilities, and areas disturbed by temporary access roads, fence installation, construction work lay-down and staging areas, parking, storage, or by any other activities resulting in disturbance to soil or vegetation. The term “Permanent Project Disturbance Area” refers only to the solar facility; “linears” includes transmission lines, laydown areas, pipelines, and access roads.</p> <p>The Project owner shall implement the following measures in Section A, B, C, and D to avoid, minimize, and compensate for direct, indirect, and cumulative impacts to special-status plant species:</p> <p><b>Section A: Special-Status Plant Impact Avoidance and Minimization Measures</b></p> <p>To protect all special-status plants located outside of the Project Disturbance Area and within 100 feet of the permitted Project Disturbance Area from accidental and indirect impacts during construction, operation, and closure, the Project owner shall implement the following measures:</p> <ol style="list-style-type: none"> <li>1. Designated Botanist. An experienced botanist who meets the qualifications described in Section <b>B-2</b> below shall oversee compliance with all special-status plant avoidance, minimization, and compensation measures described in this condition throughout construction and closure. The Designated Botanist shall oversee and train all other Biological Monitors tasked with conducting botanical survey and monitoring work. During operation of the Project, the Designated Biologist shall be responsible for protecting special-status plant occurrences within 100 feet of the Project boundaries.</li> <li>2. Special-Status Plant Impact Avoidance and Minimization Measures. The Project owner shall incorporate all measures for protecting special-status plants in close proximity to the site into the BRMIMP (<b>BIO-7</b>). These measures shall include the following elements: <ol style="list-style-type: none"> <li>a. Site Design Modifications: i) Incorporate s modifications to site design or construction techniques to minimize direct and indirect impacts to special-status plants along the Project linears to include: limiting the width of the work area; adjusting the location of staging areas, lay downs, spur roads and poles or towers; driving and crushing vegetation as an alternative to blading temporary roads to preserve the seed bank, and minor adjustments to the alignment of the roads and pipelines within the constraints of the ROW; ii) These modifications shall be clearly depicted on the grading and construction plans, and on report-sized maps in the BRMIMP.</li> </ol> </li> </ol>	<p>The Special-Status Plant Impact Avoidance and Minimization Measures shall be incorporated into the BRMIMP as required under Condition of Certification <b>BIO-7</b>.</p> <p>The Project owner shall notify the CPM and the BLM State Botanist no less than 14 days prior to the start of late-season surveys and provide a target list of late season special-status plants that will be considered. Concurrently, the Project owner shall coordinate with BLM to obtain a permit for seed collection. Seed collection is required for all special-status plants located within the Project Disturbance Area and shall be conducted according to the specifications in Section D.III.1 of this condition and with all terms and conditions of the BLM permit.</p> <p>Raw GPS data, metadata, and CNDDDB field forms shall be submitted to the CPM within two weeks of the completion of each survey. A preliminary summary of results for the late summer/fall botanical surveys, prepared according to guidelines in Section B of this condition, shall also be submitted to the CPM and BLM's State Botanist within two weeks following the completion of the surveys. If surveys are split into more than one period, then a summary letter shall be submitted following each survey period. The Final Summer-Fall Botanical Survey Report, GIS shape files and metadata shall be submitted to the BLM State Botanist and the CPM no less than 30 days prior to the start of ground-disturbing activities. The Final Report shall include a detailed accounting of the acreage of Project impacts to special-status plant occurrences.</p> <p>For any special-status plant species located within the Project Disturbance Area, the Project owner shall submit to the CPM to less than 30 days prior to the start of ground-disturbing activities proof, in the form of a letter or receipt, of the seed or other propagules collected pursuant to Section D.III #1 of this Condition.</p> <p>The draft conceptual Special-Status Plant Mitigation Plan, as described under Section C.4 of this condition, shall be submitted to the CPM for review and approval no less than 30 days prior to the start of ground-disturbing activities.</p> <p>The Project owner shall immediately provide written notification to the CPM, CDFG, USFWS, and BLM State Botanist if it detects a State- or Federal-Listed Species, or BLM Sensitive Species at any time during its late</p>	CEC



## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>b. Establish Environmentally Sensitive Areas (ESAs). Prior to the start of any ground- or vegetation-disturbing activities, the Designated Botanist shall establish ESAs to protect avoided<sup>7</sup> special-status plants located outside of the Project Disturbance Areas and within 100 feet of the boundary of construction. This includes plant occurrences identified during the spring 2009- 2010 surveys and the late season 2010 surveys. The locations of ESAs shall be clearly depicted on construction drawings, which shall also include all avoidance and minimization measures on the margins of the construction plans. The boundaries of the ESAs shall be placed a minimum of 20 feet from the uphill side of the occurrence and 10 feet from the downhill side. Where this is not possible due to construction constraints, other protection measures such as silt-fencing and sediment controls may be employed to protect the occurrences. Equipment and vehicle maintenance areas, and wash areas, shall be located 100 feet from the uphill side of any ESAs. ESAs shall be clearly delineated in the field with temporary construction fencing and signs prohibiting movement of the fencing or sediment controls under penalty of work stoppages and additional compensatory mitigation. ESAs shall also be clearly identified (with signage or by mapping on site plans) to ensure that avoided plants are not inadvertently harmed during construction, operation, or closure.</p> <p>c. Special-Status Plant Worker Environmental Awareness Program (WEAP). The WEAP (BIO-6) shall include training components specific to protection of special-status plants as outlined in this condition.</p> <p>d. Herbicide and Soil Stabilizer Drift Control Measures. Special- status plant occurrences within 100 feet of the Project Disturbance Area, and any occurrences avoided within the Project Disturbance Area<sup>3</sup> shall be protected from herbicide and soil stabilizer drift. The Weed Control Program (BIO-14) shall include measures to avoid chemical drift or residual toxicity to special-status plants consistent with guidelines such as those provided by the Nature Conservancy's The Global Invasive Species Team<sup>8</sup>, the U.S. Environmental Protection Agency, and the Pesticide Action Network Database<sup>9</sup>.</p> <p>e. Erosion and Sediment Control Measures. Erosion and sediment control measures shall not inadvertently impact special-status plants by using invasive or non-native plants in seed mixes, introducing pest plants through contaminated seed or straw, accidental burial by mulches, etc. These specifications shall be incorporated in the Drainage, Erosion, and Sedimentation Control Plan required under <b>SOIL&amp;WATER-1</b>.</p> <p>f. Locate Staging, Parking, Spoils, and Storage Areas Away from Special-Status Plant Occurrences. Areas for spoils, equipment, vehicles, and materials storage areas; parking; equipment and vehicle maintenance areas, and wash areas shall be placed at least 100 feet from any ESAs. These specifications shall be incorporated in the Drainage, Erosion, and Sedimentation Control Plan required under <b>SOIL&amp;WATER-1</b>.</p> <p>g. Pre-Construction Seed Collection. For all significant impacts to special-status plants, mitigation shall include seed collection from the affected special-status plants population on-site prior to construction to conserve the germplasm and provide a seed source for restoration efforts. Seed collection shall follow the guidelines described in Section D.III.3 of this condition.</p> <p>h. Monitoring and Reporting Requirements. The Designated Botanist, or BM under supervision of the Designated Botanist, shall conduct weekly monitoring of the ESAs that protect special-status plant occurrences during construction and decommissioning activities.</p> <p><b>Section B: Conduct Late-Season Botanical Surveys</b></p> <p>The Project owner shall conduct late-summer/fall botanical surveys for late-season special-status plants prior to start of construction or by the end of 2010, as described below:</p>	<p>summer/fall botanical surveys or at any time thereafter through the life of the Project, including conclusion of Project decommissioning.</p> <p>No less than 30 days prior to the start of ground-disturbing activities the Project owner shall submit grading plans and construction drawings to the CPM which depict the location of Environmentally Sensitive Areas and the Avoidance and Minimization Measures contained in Section A of this Condition, and under Section C.1-3.</p> <p>If compensatory mitigation is required, pursuant to Section C.1-3, no less than 30 days prior to the start of ground-disturbing activities the Project owner shall submit to the CPM the form of Security adequate to acquire compensatory mitigation lands and/or undertake habitat enhancement or restoration activities, as described in this condition. Actual Security shall be provided 7 days prior to start of ground-disturbing activities.</p> <p>No fewer than 90 days prior to acquisition of compensatory mitigation lands, the Project owner shall submit a formal acquisition proposal and draft Management Plan for the proposed lands to the CPM, with copies to CDFG, USFWS, and BLM, describing the parcels intended for purchase and shall obtain approval from the CPM prior to the acquisition. No fewer than 90 days prior to acquisition of compensatory mitigation lands, the Project owner shall submit to the CPM and obtain CPM approval of any agreements to delegate land acquisition to an approved third party, or to manage compensation lands; such agreement shall be executed and implemented within 18 months of the start of ground disturbance.</p> <p>No fewer than 30 days after acquisition of the property the Project owner shall deposit the funds required by Section I e above (long term management and maintenance fee) and provide proof of the deposit to the CPM.</p> <p>The Project owner or an approved third party shall complete the acquisition and all required transfers of the compensation lands, and provide written verification to the CPM of such completion no later than 18 months after the start of Project ground-disturbing activities. If NFWF or another approved third party is being used for the acquisition, the Project owner shall ensure that funds</p>	

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>1. Survey Timing. Surveys shall be timed to detect: a) summer annuals triggered to germinate by the warm, tropical summer storms (which may occur any time between June and October), and b) fall-blooming perennials that respond to the cooler, later season storms (typically beginning in September or October). For those species that are identified by vegetative characteristics, surveys do not have to be timed for blooming or fruiting. The surveys shall not be timed to coincide with the statistical peak bloom period of the target species but shall instead, if possible, be based on plant phenology and the timing of a significant storm event (e. g., a 10mm or greater rain or multiple storm events of sufficient volume to trigger germination as determined by a qualified botanist.). If possible, surveys shall occur at the appropriate time to capture the characteristics necessary to identify the taxon. Construction is authorized to commence following a 2010 late season survey.</p> <p>2. Surveyor Qualifications and Training. Surveys shall be conducted by a qualified botanist knowledgeable in the complex biology of the local flora, and consistent with CDFG (2009) and BLM (2009) guidelines for surveyor qualifications. Each surveyor shall be equipped with a GPS unit and record a complete tracklog; these data shall be compiled and submitted along with the Summer-Fall Survey Botanical Report (described below). Prior to the start of surveys, all crew members shall, at a minimum, visit reference sites (where available) and/or review herbarium specimens of all BLM Sensitive plants, CNPS List 1B or 2 (Nature Serve rank S1 and S2) or proposed List 1B or 2 taxa, and any new reported or documented taxa, to obtain a search image. Because the potential for range extensions is unknown, the list of potentially occurring special-status plants shall include all special-status taxa known to occur within the Sonoran Desert region and the eastern portion of the Mojave in California. The list shall also include taxa with bloom seasons that begin in fall and extend into the early spring as many of these are reported to be easier to detect in fall, following the start of the fall rains.</p> <p>3. Survey Coverage. The survey coverage or intensity shall be in accordance with BLM Survey Protocols (issued July 2009)10, which specify that intuitive controlled surveys shall only be accomplished by botanists familiar with the habitats and species that may reasonably be expected to occur in the project area.</p> <p>4. Pre-Construction Seed Collection. For all significant impacts to special-status plants, mitigation shall include seed collection from the affected special-status plants population on-site prior to construction to conserve the germplasm and provide a seed source for restoration efforts. Seed collection shall be conducted during the late-season surveys follow the guidelines described in Section D.III.3 of this condition.</p> <p>5. Documenting Occurrences. If a special-status plant is detected, the full extent of the population onsite shall be recorded using GPS in accordance with BLM survey protocols. Additionally, the extent of the population within one mile of Project boundaries shall be assessed at least qualitatively to facilitate an accurate estimation of the proportion of the population affected by the Project. For populations that are very dense or very large, the population size may be estimated by simple sampling techniques. When populations are very extensive or locally abundant, the surveyor must provide some basis for this assertion and roughly map the extent on a topographic map. All but the smallest populations (e.g., a population occupying less than 100 square feet) shall be recorded as area polygons; the smallest populations may be recorded as point features. All GPS-recorded occurrences shall include: the number of plants, phenology, observed threats (e.g., OHV or invasive exotics), and habitat or community type. The map of occurrences submitted with the final botanical report shall be prepared to ensure consistency with definition of an occurrence by CNDDB, i.e., occurrences found within 0.25 miles of another occurrence of the same taxon, and not separated by significant habitat discontinuities, shall be combined into a single 'occurrence'. The Project owner shall also submit the raw GPS shape files and metadata, and completed CNDDB forms for each 'occurrence' (as defined by CNDDB).</p>	<p>needed to accomplish the acquisition are transferred in timely manner to facilitate the planned acquisition and to ensure the land can be acquired and transferred prior to the 18-month deadline. If habitat enhancement is proposed, no later than six months following the start of ground-disturbing activities, the Project owner shall obtain CPM approval of the final Habitat Enhancement/Restoration Plan, prepared in accordance with Section D, and submit to the CPM or a third party approved by the CPM Security adequate for long-term implementation and monitoring of the Habitat Enhancement/Restoration Plan.</p> <p>Enhancement/restoration activities shall be initiated no later than 12 months from the start of construction. The implementation phase of the enhancement project shall be completed within five years of initiation. Until completion of the five-year implementation portion of the enhancement action, a report shall be prepared and submitted as part of the Annual Compliance Report. This report shall provide, at a minimum: a summary of activities for the preceding year and a summary of activities for the following year; quantitative measurements of the Project's progress in meeting the enhancement project success criteria; detailed description of remedial actions taken or proposed; and contact information for the responsible parties.</p> <p>If a contingency measure is required, as described in Section D.III of this condition, the Project owner shall submit commence no later than six months following the start of ground-disturbing activities. The draft study shall be submitted to the CPM and BLM State Botanist for review and approval no more than two years following the start of ground-disturbing activities. The final study shall be submitted no more than 30 months following the start of ground- disturbing activities. If a Distribution Study is implemented as contingency mitigation, the study shall be initiated no later than 6 months from the start of construction. The implementation phase of the study shall be completed within two years of the start of construction.</p> <p>Within 18 months of ground-disturbing activities, the Project owner shall transfer to the CPM or an approved third party the difference between the Security paid and the actual costs of (1) acquiring compensatory mitigation lands,</p>	

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>6 Reporting. Raw GPS data, metadata, and CNDDDB field forms shall be provided to the CPM and the BLM State Botanist within two weeks of the completion of each survey. If surveys are split into two or more periods (e.g., a late summer survey and a fall survey), then a summary letter shall be submitted following each survey period. The Final Summer-Fall Botanical Survey Report shall be prepared consistent with CDFG guidelines (CDFG 2009), and BLM 2009 guidelines and shall include all of the following components:</p> <ul style="list-style-type: none"> <li>a. the BLM designation, NatureServe Global and State Rank of each species or taxon found (or proposed rank, or CNPS List);</li> <li>b. the number or percent of the occurrence that will be directly affected, and indirectly affected by changes in drainage patterns or altered geomorphic processes;</li> <li>c. the habitat or plant community that supports the occurrence and the total acres of that habitat or community type that occurs in the Project Disturbance Area;</li> <li>d. an indication of whether the occurrence has any local or regional significance (e.g., if it exhibits any unusual morphology, occurs at the periphery of its range in California, represents a significant range extension or disjunct occurrence, or occurs in an atypical habitat or substrate);</li> <li>e. a completed CNDDDB field form for every occurrence (occurrences of the same species within one-quarter mile or less of each other combined as one occurrence, consistent with CNDDDB methodology), and</li> <li>f. two maps: one that depicts the raw GPS data (as collected in the field) on a topographic base map with Project features; and a second map that follows the CNDDDB protocol for occurrence mapping.</li> </ul> <p><b>Section C: Avoidance Requirements for Special-Status</b></p> <p><i>Plants Detected in the Summer/Fall 2010 Surveys</i></p> <p>The Project owner shall apply the following avoidance and mitigation standards for impacts to late blooming special-status plants that might be detected during late summer/fall season surveys. The Project owner shall immediately notify the CDFG, USFWS, BLM State Botanist, and the CPM if any State- or Federal-listed species or BLM Sensitive species are detected. Avoidance and/or the off-site mitigation measures described in Section D below would reduce impacts to these special-status plant species to less-than-significant levels. Plants shall be considered impacted if they are within the Project footprint, or if they would be affected by Project-related hydrologic changes or changes to the local sand transport system Downstream/ downwind impacts from altered hydrology or geomorphic processes shall be considered direct impacts.</p> <p>1. Mitigation for CNDDDB Rank 1-Equivalent Plants (Critically Imperiled). Species that are not federally or state listed but are CNDDDB Rank 1 plants first will be evaluated using all available data to determine if they meet the definition of a CNDDDB Rank 1 species (i.e., a Rank 1-equivalent species). If late blooming CNDDDB Rank 1-equivalent species are detected within the Project Disturbance Area, complete avoidance is mandatory along the linears and within construction laydown areas. The Project owner shall limit the width of the work area; adjusting the location of staging areas, lay downs, spur roads and poles or towers; driving and crushing vegetation as an alternative to blading temporary roads, and other construction or design modifications as necessary to achieve avoidance of any Rank 1-equivalent plants detected.</p> <p>If late-season Rank 1-equivalent plants are detected on the solar facility, the Project owner shall avoid all plants around the perimeter of the facility as necessary to achieve 75 percent avoidance of the local population of the affected species. The local population shall be measured by the number of individuals occurring on the Project Site and within</p>	<p>completing initial protection and habitat improvement, and funding the long-term maintenance and management of compensatory mitigation lands; and/or (2) implementing and providing for the long-term protection and monitoring of habitat enhancement or restoration activities.</p> <p>Implementation of the special-status plant impact avoidance and minimization measures shall be reported in the Monthly Compliance Reports prepared by the Designated Botanist. Within 30 days after completion of Project construction, the Project owner shall provide to the CPM, for review and approval, in consultation with the BLM State Botanist, a written construction termination report identifying how measures have been completed.</p> <p>The Project owner shall submit a monitoring report every year for the life of the project to monitor effectiveness of protection measures for all avoided special- status plants to the CPM and BLM State Botanist. The monitoring report shall include: dates of worker awareness training sessions and attendees, completed CNDDDB field forms for each avoided occurrence on-site and within 100 feet of the Project boundary off-site, and description of the remedial action, if warranted and planned for the upcoming year. The completed forms shall include an inventory of the special-status plant occurrences and description of the habitat conditions, an indication of population and habitat quality trends.</p>	

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>the immediate watershed of the Project for wash dependent-species or species of unknown dispersal mechanism, or within the local sand transport corridor for wind dispersed species. Measurement of percent avoidance shall be based on population for perennials and on habitat for annuals (habitat containing the species' micro-habitat preferences, such as "fine silts and moist depressions"). Avoidance within the central portion of the solar facility is not recommended because it would create fragmented conditions that would not sustain persistence of the affected species. For all portions of the local population not avoided, the Project owner shall implement off-site mitigation at a ratio of 3:1. The off-site mitigation may include land acquisition or implementation of a restoration/enhancement program for the species, and shall meet the performance standards described in section D of this Condition. The Applicant must demonstrate, subject to review and approval by the CPM, that the impacts, after mitigation, will not cause a loss of viability for that species. The Project owner shall prepare and implement a Special-Status Plant Mitigation Plan (Plan). The content of the Plan and definitions shall be as described above in subsection C.3, below.</p> <p>2. Mitigation for CNDDDB Rank 2-Equivalent Plants (Imperiled). Species that are CNDDDB Rank plants first will be evaluated using all available data to determine if they meet the definition of a CNDDDB Rank 2 species (i.e., a Rank 2-equivalent species). If late-season CNDDDB Rank 2-equivalent species are detected within the Project Disturbance Area avoidance is mandatory along the linears and construction laydown areas, unless such avoidance would create greater environmental impacts in other resource areas (e.g., cultural resource sites). The Project owner shall limit the width of the work area, adjusting the location of staging areas, lay downs, spur roads and poles or towers; driving and crushing vegetation as an alternative to blading temporary roads, and other construction or design modifications as necessary to achieve avoidance of any Rank 2-equivalent plants detected.</p> <p>If late-season Rank 2-equivalent plants are detected on the solar facility, the Project owner shall implement off-site mitigation, at a ratio of 2:1, for any impacts exceeding 25 percent of the local population. The off-site mitigation may include land acquisition or implementation of a restoration/enhancement program for the species, and shall meet the performance standards described in section D of this Condition. The Project owner must demonstrate, subject to review and approval by the CPM, that the impacts, after mitigation, will not cause a loss of viability for that species. The Project owner shall prepare and implement a Special-Status Plant Mitigation Plan (Plan). The content of the Plan and definitions shall be as described above in subsection C.3, below.</p> <p>3. Mitigation for CNDDDB Rank 3-Equivalent Plants (Vulnerable). If CNDDDB Rank 3 plants are detected (which constitutes most CNPS List 4 plants), mitigation is not required unless the occurrence has local or regional significance, in which case the plant occurrence shall be treated as a CNDDDB Rank 2 plant if it meets the definition of a CNDDDB Rank 2 species; avoidance and mitigation would be as described above under C.2. A plant occurrence would be considered to have local or regional significance if:</p> <ul style="list-style-type: none"> <li>a. It occurs at the outermost periphery of its range in California;</li> <li>b. It occurs in an atypical habitat, region, or elevation for the taxon that suggests that the occurrence may have genetic significance (e.g., that may increase its ability to survive future threats), or;</li> <li>c. It exhibits any unusual morphology that is not clearly attributable to environmental factors that may indicate a potential new variety or sub-species.</li> </ul> <p>4. Prepare Special-Status Plant Mitigation Plan. If the project will impact any CNDDDB Rank 1-equivalent or Rank 2-equivalent plants, or Rank 3 plants of local or regional significance that also meet the definition of a CNDDDB Rank 2 species, or new taxa, the Project owner shall prepare and implement a Special-Status Plant Mitigation Plan (Plan).</p>		

## APPLICANT PROPOSED MEASURES

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<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>Compensatory mitigation, as described in Section D of this condition, and at a mitigation ratio of 3:1 for Rank 1 plants, and 2:1 for Rank 2 plants and Rank 1 plants of local or regional significance, and new taxa. The Plan shall include, at a minimum, the following components and definitions:</p> <ol style="list-style-type: none"> <li>A description of the occurrences of the affected special-status species, ecological characteristics such as soil, hydrology, and other micro-habitat requirements, ecosystem processes required for maintenance of the species or its habitat, reproduction and dispersal mechanisms, pollinators, local distribution, a description of the extent of the population off-site, the percentage of the local population affected, and a description of how these occurrences would be impacted by the Project, including direct and indirect effects. Occurrences shall be considered impacted if they are within the Project footprint, and if they would be affected by Project-related hydrologic changes or changes to the local sand transport system.</li> <li>A description of the avoidance and minimization measures that would achieve complete avoidance of occurrences on the Project linears and construction laydown areas. If avoidance is also required on the solar facility (Rank 1-equivalent species), provide a description of the measures that would be implemented to avoid or minimize impacts to occurrences on the solar facility. "Avoidance" shall include protection of the ecosystem processes essential for maintenance of the protected plant occurrence, and protection of the seed bank. Isolated 'islands' of protected plants disconnected by the Project from natural fluvial, aeolian (wind), or other processes essential for maintenance of the species, shall not be considered avoidance.</li> <li>If off-site mitigation is also required, pursuant to C.1 –C.3 above, the Plan shall include a description of the proposed mitigation (acquisition or restoration/enhancement) and demonstrate how the mitigation will meet the performance standards described in Section D of this condition.</li> </ol> <p>For CNDDDB Rank 1-equivalent plants that cannot be avoided (i.e., plants located in the central portion of the solar facility), the Plan must demonstrate that the impacts (after mitigation) will not cause a loss of viability for that species. The assessment of viability shall include: <i>i</i>) current literature compilation and review on the affected species, it's documented and reported occurrences, range and distribution, habitat, and the ecological conditions needed to support it; <i>ii</i>) consultation with scientists and others with expertise and local knowledge of the species to gather unpublished data and other information to supplement the literature review findings, and (if available) <i>iii</i>) information on species' habitat relationships, demographics, genetics, and risk factors.</p> <p><b>Section D: Off-Site Compensatory Mitigation for Special- Status Plants</b></p> <p>Where compensatory mitigation is required under the terms of Section C, above, the Project owner shall mitigate Project impacts to special- status plant occurrences with compensatory mitigation. Compensatory mitigation shall consist of acquisition of habitat supporting the target species, or restoration/enhancement of populations of the target species, and shall meet the performance standards for mitigation described below. In the event that no opportunities for acquisition or restoration/enhancement exist, the Project owner can fund a species distribution study designed to promote the future preservation, protection or recovery of the species. Compensatory mitigation shall be at a ratio of 3:1 for Rank 1-equivalent plants, with three acres of habitat acquired or restored/enhanced for every acre of habitat occupied by the special status plant that will be disturbed by the Project Disturbance Area (for example if the area occupied by the special status plant collectively measured is 1/4 acre than the compensabry mitigation will be 3/4 of an acre). The mitigation ratio for Rank 2-equivalent plants shall be 2:1. So, for the example above, the mitigation ratio would be one-half acre for the Rank 2-equivalent plants.</p>		

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<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>The Project owner shall provide funding for the acquisition and/or restoration/enhancement, initial improvement, and long-term maintenance and management of the acquired or restored lands. The actual costs to comply with this condition will vary depending on the Project Disturbance Area, the actual costs of acquiring compensation habitat, the actual costs of initially improving the habitat, the actual costs of long-term management as determined by a Property Analysis Record (PAR) report, and other transactional costs related to the use of compensatory mitigation. The Project owner shall comply with other related requirements in this condition:</p> <p><b>I. Compensatory Mitigation by Acquisition:</b> The requirements for the acquisition, initial protection and habitat improvement, and long-term maintenance and management of special-status plant compensation lands include all of the following:</p> <ol style="list-style-type: none"> <li>1. Selection Criteria for Acquisition Lands. The compensation lands selected for acquisition may include any of the following three categories: <ol style="list-style-type: none"> <li>a. Occupied Habitat, No Habitat Threats. The compensation lands selected for acquisition shall be occupied by the target plant population and shall be characterized by site integrity and habitat quality that are required to support the target species, and shall be of equal or better habitat quality than that of the affected occurrence. The occurrence of the target special-status plant on the proposed acquisition lands should be viable, stable or increasing (in size and reproduction).</li> <li>b. Occupied Habitat, Habitat Threats. Occupied compensation lands characterized by habitat threats may also be acquired as long as the population could be reasonably expected to recover with habitat restoration efforts (e.g., OHV or grazing exclusion, or removal of invasive non-native plants) and is accompanied by a Habitat Enhancement/Restoration Plan as described in Section D.II, below.</li> <li>c. Unoccupied but Adjacent. The Project owner may also acquire habitat for which occupancy by the target species has not been documented, if the proposed acquisition lands are adjacent to occupied habitat. The Project owner shall provide evidence that acquisitions of such unoccupied lands would improve the defensibility and long-term sustainability of the occupied habitat by providing a protective buffer around the occurrence and by enhancing connectivity with undisturbed habitat. This acquisition may include habitat restoration efforts where appropriate, particularly when these restoration efforts will benefit adjacent habitat that is occupied by the target species.</li> </ol> </li> <li>2. Review and Approval of Compensation Lands Prior to Acquisition. The Project owner shall submit a formal acquisition proposal to the CPM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for special-status plants in relation to the criteria listed above, and must be approved by the CPM.</li> <li>3. Management Plan. The Project owner or approved third party shall prepare a management plan for the compensation lands in consultation with the entity that will be managing the lands. The goal of the management plan shall be to support and enhance the long-term viability of the target special-status plant occurrences. The Management Plan shall be submitted for review and approval to the CPM.</li> <li>4. Integrating Special-Status Plant Mitigation with Other Mitigation lands. If all or any portion of the acquired Desert Tortoise, Waters of the State, or other required compensation lands meets the criteria above for special-status plant compensation lands, the portion of the other species' or habitat compensation lands that meets any of the criteria above may be used to fulfill that portion of the obligation for special-status plant mitigation.</li> </ol>		

## APPLICANT PROPOSED MEASURES

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<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>5. Compensation Lands Acquisition Requirements. The Project owner shall comply with the following requirements relating to acquisition of the compensation lands after the CPM, has approved the proposed compensation lands:</p> <p>a. Preliminary Report. The Project owner, or an approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the CPM. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission and the Wildlife Conservation Board.</p> <p>b. Title/Conveyance. The Project owner shall acquire and transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement, as required by the CPM. Any transfer of a conservation easement or fee title must be to CDFG, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to BLM or other public agency approved by the CPM. If an approved non-profit organization holds fee title to the compensation lands, a conservation easement shall be recorded in favor of CDFG or another entity approved by the CPM. If an entity other than CDFG holds a conservation easement over the compensation lands, the CPM may require that CDFG or another entity approved by the CPM, in consultation with CDFG, be named a third party beneficiary of the conservation easement. The Project owner shall obtain approval of the CPM of the terms of any transfer of fee title or conservation easement to the compensation lands.</p> <p>c. Initial Protection and Habitat Improvement. The Project owner shall fund activities that the CPM requires for the initial protection and habitat improvement of the compensation lands. These activities will vary depending on the condition and location of the land acquired, but may include trash removal, construction and repair of fences, invasive plant removal, and similar measures to protect habitat and improve habitat quality on the compensation lands. The costs of these activities would use the estimated cost per acre for Desert Tortoise mitigation as a best available proxy, at the ratio of 3:1 for Rank 1-equivalent plants and 2:1 for Rank 2-equivalent plants, but actual costs will vary depending on the measures that are required for the compensation lands. A non-profit organization, CDFG or another public agency may hold and expend the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965), if it meets the approval of the CPM in consultation with CDFG, and if it is authorized to participate in implementing the required activities on the compensation lands. If CDFG takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFG or its designee.</p> <p>d. Property Analysis Record. Upon identification of the compensation lands, the Project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate amount of the long-term maintenance and management fund to pay the in-perpetuity management of the compensation lands. The PAR or PAR-like analysis must be approved by the CPM before it can be used to establish funding levels or management activities for the compensation lands.</p> <p>e. Long-term Maintenance and Management Funding. The Project owner shall deposit in NFWF's REAT Account a capital long-term maintenance and management fee in the amount determined through the Property Analysis Record (PAR) or PAR-like analysis conducted for the compensation lands.</p>		

## APPLICANT PROPOSED MEASURES

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<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>The CPM, in consultation with CDFG, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity. If CDFG takes fee title to the compensation lands, CDFG shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for CDFG and with CDFG supervision. Interest, Principal, and Pooling of Funds. The Project owner shall ensure that an agreement is in place with the long-term maintenance and management fund (endowment) holder/manager to ensure the following requirements are met:</p> <ul style="list-style-type: none"> <li>i. Interest. Interest generated from the initial capital long-term maintenance and management fund shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action that is approved by the CPM and is designed to protect or improve the habitat values of the compensation lands.</li> <li>ii. Withdrawal of Principal. The long-term maintenance and management fund principal shall not be drawn upon unless such withdrawal is deemed necessary by the CPM or by the approved third-party long-term maintenance and management fund manager, to ensure the continued viability of the species on the compensation lands.</li> <li>iii. Pooling Long-Term Maintenance and Management Funds. An entity approved to hold long-term maintenance and management funds for the Project may pool those funds with similar funds that it holds from other projects for long-term maintenance and management of compensation lands for special-status plants. However, for reporting purposes, the long-term maintenance and management funds for this Project must be tracked and reported individually to the CPM.</li> <li>f. Other Expenses. In addition to the costs listed above, the Project owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to the title and document review costs incurred from other state agency reviews, overhead related to providing compensation lands to CDFG or an approved third party, escrow fees or costs, environmental contaminants clearance, and other site cleanup measures.</li> <li>g. Mitigation Security. The Project owner shall provide financial assurances to the CPM to guarantee that an adequate level of funding is available to implement any of the mitigation measures required by this condition that are not completed prior to the start of ground-disturbing Project activities. Financial assurances shall be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security") approved by the CPM. The amount of the Security shall use the estimated cost per acre for Desert Tortoise mitigation as a best available proxy, at a ratio of 3:1 for Rank 1 plants and 2:1 for Rank 2 plants, for every acre of habitat supporting the target special-status plant species which is significantly impacted by the project. The actual costs to comply with this condition will vary depending on the actual costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a PAR report. Prior to submitting the Security to the CPM, the Project owner shall obtain the CPM's approval of the form of the Security. The CPM may draw on the Security if the CPM determines the Project owner has failed to comply with the requirements specified in this condition. The CPM may use money from the Security solely for implementation of the requirements of this condition. The CPM's use of the Security to implement measures in this condition may not fully satisfy the Project owner's obligations under this condition, and the Project owner remains responsible for satisfying the obligations under this condition if the Security is insufficient. The unused Security shall be returned to the Project owner in whole or in part upon successful completion of the associated requirements in this condition.</li> </ul>		



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<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>h. NFWF REAT Account. The Project owner may elect to comply with the requirements in this condition for acquisition of compensation lands, initial protection and habitat improvement on the compensation lands, or long-term maintenance and management of the compensation lands by funding, or any combination of these three requirements, by providing funds to implement those measures into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF). To use this option, the Project owner must make an initial deposit to the REAT Account in an amount equal to the estimated costs (as set forth in the Security section of this condition) of implementing the requirement. If the actual cost of the acquisition, initial protection and habitat improvements, or long-term funding is more than the estimated amount initially paid by the Project owner, the Project owner shall make an additional deposit into the REAT Account sufficient to cover the actual acquisition costs, the actual costs of initial protection and habitat improvement on the compensation lands, and the long-term funding requirements as established in an approved PAR or PAR-like analysis. If those actual costs or PAR projections are less than the amount initially transferred by the Applicant, the remaining balance shall be returned to the Project owner.</p> <p>The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the Energy Commission. Such delegation shall be subject to approval by the CPM, in consultation with CDFG, BLM and USFWS, prior to land acquisition, enhancement or management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be executed and implemented within 18 months of the start of ground disturbance.</p> <p><b>II. Compensatory Mitigation by Habitat Enhancement/Restoration:</b> As an alternative or adjunct to land acquisition for compensatory mitigation the Project owner may undertake habitat enhancement or restoration for the target special-status plant species. Habitat enhancement or restoration activities must achieve protection at a 3:1 ratio for Rank 1 plants and 2:1 for Rank 2 plants, with improvements applied to three acres, or two acres, respectively, of habitat for every acre special-status plant habitat directly or indirectly disturbed by the Project Disturbance Area (for example if the area occupied by the special status plant collectively measured is 1/4 acre than the improvements would be applied to an area equal to 3/4 of an acre at a 3:1 ratio, or one-half acre at a 2:1 ratio). Examples of suitable enhancement projects include but are not limited to the following: i) control unauthorized vehicle use into an occurrence (or pedestrian use if clearly damaging to the species); ii) control of invasive non-native plants that infest or pose an immediate threat to an occurrence; iii) exclude grazing by wild burros or livestock from an occurrence; or iv) restore lost or degraded hydrologic or geomorphic functions critical to the species by restoring previously diverted flows, removing obstructions to the wind sand transport corridor above an occurrence, or increasing groundwater availability for dependent species.</p> <p>If the Project owner elects to undertake a habitat enhancement project for mitigation, the project must meet the following performance standards: The proposed enhancement project shall achieve rescue of an off-site occurrence that is currently assessed, based on the NatureServe threat ranking system<sup>17</sup> with one of the following threat ranks: a) long-term decline &gt;30%; b) an immediate threat that affects &gt;30% of the population, or c) has an overall threat impact that is High to Very High. "Rescue" would be considered successful if it achieves an improvement in the occurrence trend to "stable" or "increasing" status, or downgrading of the overall threat rank to slight or low (from "High" to "Very High").</p> <p>If the Project owner elects to undertake a habitat enhancement project for mitigation, they shall submit a Habitat Enhancement/Restoration Plan to the CPM for review and approval, and shall provide sufficient funding for implementation and monitoring of the Plan. The amount of the Security shall use the estimated cost per acre for Desert Tortoise mitigation as a best available proxy, at the ratio of 3:1 for Rank 1 plants and 2:1 for Rank 2 plants, for every acre of habitat supporting the target special-status plant species which is directly or indirectly impacted by the project. The amount of the security may be adjusted based on the actual costs of implementing the enhancement, restoration and monitoring. The</p>		

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<p>implementation and monitoring of the enhancement/restoration may be undertaken by an appropriate third party such as NFWF, subject to approval by the CPM. The Habitat Enhancement/Restoration Plan shall include each of the following:</p> <ol style="list-style-type: none"> <li>1. <b>Goals and Objectives.</b> Define the goals of the restoration or enhancement project and a measurable course of action developed to achieve those goals. The objective of the proposed habitat enhancement plan shall include restoration of a target special- status plant occurrence that is currently threatened with a long-term decline. The proposed enhancement plan shall achieve an improvement in the occurrence trend to "stable" or "increasing" status, or downgrading of the overall threat rank to slight or low (from "High" to "Very High").</li> <li>2. <b>Historical Conditions.</b> Provide a description of the pre-impact or historical conditions (before the site was degraded by weeds or grazing or ORV, etc.), and the desired conditions.</li> <li>3. <b>Site Characteristics.</b> Describe other site characteristics relevant to the restoration or enhancement project (e.g., composition of native and pest plants, topography and drainage patterns, soil types, geomorphic and hydrologic processes important to the site or species. 4. <b>Ecological Factors.</b> Describe other important ecological factors of the species being protected, restored, or enhanced such as total population, reproduction, distribution, pollinators, etc.</li> <li>5. <b>Methods.</b> Describe the restoration methods that will be used (e.g., invasive exotics control, site protection, seedling protection, propagation techniques, etc.) and the long-term maintenance required. The implementation phase of the enhancement must be completed within five years.</li> <li>6. <b>Budget.</b> Provide a detailed budget and time-line, and develop clear, measurable, objective-driven annual success criteria.</li> <li>7. <b>Monitoring.</b> Develop clear, measurable monitoring methods that can be used to evaluate the effectiveness of the restoration and the benefit to the affected species. The Plan shall include a minimum of five years of quarterly monitoring, and then annual monitoring for the remainder of the enhancement project, and until the performance standards for rescue of a threatened occurrence are met. At a minimum the progress reports shall include: quantitative measurements of the projects progress in meeting the enhancement project success criteria, detailed description of remedial actions taken or proposed, and contact information for the responsible parties.</li> <li>8. <b>Reporting Program.</b> The Plan shall ensure accountability with a reporting program that includes progress toward goals and success criteria. Include names of responsible parties.</li> <li>9. <b>Contingency Plan.</b> Describe the contingency plan for failure to meet annual goals.</li> <li>10. <b>Long-term Protection.</b> Include proof of long-term protection for the restoration site. For private lands this would include conservations easements or other deed restrictions; projects on public lands must be contained in a Desert Wildlife Management Area, Wildlife Habitat Management Area, or other land use protections that will protect the mitigation site and target species.</li> </ol> <p><b>III. Contingency Measures:</b></p> <ol style="list-style-type: none"> <li>1. <b>Preservation of the Germplasm of Affected Special-Status Plants.</b> For all significant impacts to special-status plants, mitigation shall also include seed collection from the affected special-status plants population on-site prior to construction to conserve the germplasm and provide a seed source for restoration efforts. The seed shall be collected under the supervision or guidance of a reputable seed storage facility such as the Rancho Santa Ana Botanical Garden Seed Conservation Program, San Diego Natural History Museum, or the Missouri Botanical Garden. The costs</li> </ol>		

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<p>associated with the long-term storage of the seed shall be the responsibility of the Project owner. Any efforts to propagate and reintroduce special- status plants from seeds in the wild shall be carried out under the direct supervision of specialists such as those listed above and as part of a Habitat Restoration/Enhancement Plan approved by the CPM.</p> <p>2. Compensatory Mitigation by Conducting or Contributing to a Management Plan for the Affected Species. Subject to approval of the CPM, as a contingency measure in the event there are no opportunities for mitigation through acquisition or restoration/enhancement to meet the obligations for off-site mitigation as described in Section C.1-3 of this condition, a Management Plan for the affected special-status plant species may be conducted or funded. The goal of the Management Plan is to devise a science-based, region-wide strategy to ensure the long- term viability of the affected species, and to acquire, protect, and restore existing populations and the habitat that supports them. The information gathered shall be used to develop conservation approaches to address the identified risk factors. These approaches include land allocations, restoration needs, identifying and preserving important refugia to facilitate species dispersal and maintain biodiversity in the face of climate change, recommending Best Management Practices or other measures that could be used to minimize threats, and identifying planning needs at the regional level. The results of the study would also be provided to the resource agencies, conservation organizations, and academic institutions, as well as the state's Natural Diversity Database and Consortium of California Herbaria.</p> <p>3. Under this contingency measure, the Project owner shall acquire all available information on the distribution, status or health of known occurrences, ecological requirements, and ownership and management opportunities of the affected special-status plant species and other special status plants known to occur in the Chuckwalla Valley. Some of these late blooming species are only known from a few viable occurrences in California, and historic occurrences that have not been re-located or surveyed since they were first documented. At a minimum, the study shall include the following:</p> <p>a. Occurrence and Life History Review. The Study shall include an evaluation of all documented, historical and reported localities for the affected species, and a review of current information on the species life history. This would include a review of the CNDDDB database, records from regional and national herbaria, literature review, consultation with U.C. Riverside, San Diego Natural History Museum, and other educational institutions or natural heritage organizations in California, Arizona, and Nevada, etc.), other biotechnical survey reports from the region, and information from regional botanical experts.</p> <p>b. Conduct Site Visits to Documented and Reported Localities. Documented and reported occurrences would be evaluated in the field during the appropriate time of the year for each late blooming species. If located, these occurrences would be evaluated for population size (area and quantity), population trend, ecological characteristics, soils, habitat quality, potential threats, degree and immediacy of threats, ownership and management opportunities. GPS location data would also be collected during these site visits.</p> <p>c. Survey Surrounding Areas. Areas surrounding the occurrences that contain habitat suitable to support the affected species shall be surveyed to determine the full extent of its range and distribution. If additional populations are found, collect data (GPS and assessment) on these additional populations consistent with III.2 above.</p> <p>d. Prepare Report on Status, Distribution, and Management Needs. A report shall be prepared that contains the results of the surveys and assessment. The report shall contain the following components: a) Range and Distribution (including maps and GPS data); b) Abundance and Population Trends; c) Life History; d) Habitat Necessary for Survival; d) Factors Affecting Ability to Survive and Reproduce; e) Degree and Immediacy of Threat; f) Ownership and Management Opportunities for Protection or Recovery; g) Sources of Information, and g) Conclusions. The conclusions shall contain an explanation of whether the species' survival is threatened by any of the following factors: i) present or threatened modification or destruction of its habitat; ii) competition; iii) disease; iv) other natural</p>		

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<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>occurrences (such as climate change) or human-related activities. This valuable information will provide a better understanding of the ecological factors driving the distribution of these species, and will identify opportunities for mitigation and management opportunities for recovery. All data from this study will be submitted for incorporation into the CNDDDB system and the study report will be made available to resource agencies, and conservation groups, and other interested parties.</p> <p>e. The cost to implement or fund the study shall be no greater than the cost for acquisition, enhancement, and long-term management of compensatory mitigation lands based on the specifications and standards for acquisition or restoration/enhancement described above under D.I and D.II.</p>		
<p><b>BIO-20, Sand Dune/Mojave Fringe-Toed Lizard Mitigation:</b> To mitigate for habitat loss and direct impacts to Mojave fringe-toed lizards the Project owner shall provide compensatory mitigation, which may include compensation lands purchased in fee or in easement in whole or in part, at the following ratios:</p> <p>3:1 mitigation for direct impacts to stabilized and partially stabilized sand dunes (per BIO-29 – Table 2 or final acreage impacted by the Project footprint);</p> <p>1:1 mitigation for direct impacts non-dune Mojave fringe-toed lizard habitat (per BIO-29 – Table 2 or final acreage impacted by the Project footprint); and</p> <p>0.5:1 mitigation for indirect impacts to stabilized and partially stabilized sand dunes (per BIO-29 – Table 2 or final acreage impacted by the Project footprint).</p> <p>If compensation lands are acquired, the Project owner shall provide funding for the acquisition in fee title or in easement, initial habitat improvements, and long-term maintenance and management of the compensation lands. In addition, the compensation lands must include, at a minimum, the number acres of stabilized and partially stabilized sand dune habitat shown in <b>BIO-29 Table 2</b> (see 2010 CEC PSPP Commission Decision, pp. 142 – 143).</p> <p>1. Criteria for Compensation Lands: The compensation lands selected for acquisition shall:</p> <ol style="list-style-type: none"> <li>Provide suitable habitat for Mojave fringe-toed lizards, and, aside from the minimum amount of stabilized and partially stabilized sand dunes, may include stabilized and partially stabilized desert dunes, sand drifts over playas, or Sonoran creosote bush scrub;</li> <li>Be within the Palen or Chuckwalla valleys with potential to contribute to Mojave fringe-toed lizard habitat connectivity and build linkages between known populations of Mojave fringe-toed lizards and preserve lands with suitable habitat;</li> <li>Be prioritized near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non- governmental organization dedicated to habitat preservation;</li> <li>Provide quality habitat for Mojave fringe-toed lizard that has the capacity to regenerate naturally when disturbances are removed;</li> <li>Not have a history of intensive recreational use or other disturbance that might make habitat recovery and restoration infeasible;</li> <li>Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;</li> </ol>	<p>No later than 30 days prior to beginning Project ground-disturbing activities, the Project owner shall provide written verification of an approved form of Security in accordance with this condition of certification. Actual Security shall be provided no later than 7 days prior to the beginning of Project ground- disturbing activities for each Project phase as described in <b>BIO-29</b>. The Project owner, or an approved third party, shall complete and provide written verification of the proposed compensation lands acquisition within 18 months of the start of Project ground-disturbing activities for each Project phase.</p> <p>No less than 90 days prior to acquisition of the property, the Project owner shall submit a formal acquisition proposal to the CPM, CDFG, and USFWS describing the parcels intended for purchase.</p> <p>The Project owner, or an approved third party, shall provide the CPM, BLM, and CDFG, with a management plan for the compensation lands and associated funds within 180 days of the land or easement purchase, as determined by the date on the title. The CPM shall review and approve the management plan, in consultation with BLM and CDFG.</p> <p>Within 90 days after completion of Project construction, the Project owner shall provide to the CPM and CDFG an analysis with the final accounting of the amount (detailed by habitat type) of Mojave fringe-toed lizard habitat disturbed during Project construction.</p> <p>The Project owner shall provide written verification to the CPM, and CDFG that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient no later than 18 months from the start of ground-disturbing activities.</p>	CEC

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>g. Not contain hazardous wastes that cannot be removed to the extent the site is suitable for habitat;</p> <p>h. Have water and mineral rights included as part of the acquisition, unless the CPM, in consultation with CDFG, BLM and USFWS, agrees in writing to the acceptability of the land; and</p> <p>i. Be on land for which long-term management is feasible.</p> <p>2. Security for Implementation of Mitigation: The Project owner shall provide financial assurances to the CPM to guarantee that an adequate level of funding is available to implement the acquisitions and enhancement of Mojave fringe-toed lizard habitat as described in this condition. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the CPM according to the measures outlined in <b>BIO-12</b>, and within the time period specified for this assurance (see the verification section at the end of this condition). The final amount due will be determined by an updated appraisal and a PAR analysis conducted as described in <b>BIO-12</b>, but current estimates are included in <b>Biological Resources Tables 22 and 23</b> located at the beginning of the conditions of certification subsection (see 2010 CEC PSPP Revised Staff Assessment, Part II, pp. C.2-250 – C.2-251).</p> <p>3. Preparation of Management Plan: The Project owner shall submit to the CPM, BLM, and CDFG a draft Management Plan that reflects site-specific enhancement measures for the Mojave fringe-toed lizard habitat on the acquired compensation lands. The objective of the Management Plan shall be to enhance the value of the compensation lands for Mojave fringe-toed lizards, and may include enhancement actions such as weed control, fencing to exclude livestock, erosion control, or protection of sand sources or sand transport corridors.</p>		
<p><b>BIO-21, Mitigation for Impacts to State Waters:</b> The Project owner shall implement the following measures to avoid, minimize and mitigate for direct and indirect impacts to waters of the state and to satisfy requirements of California Fish and Game Code sections 1600 and 1607.</p> <p>1. Acquire Off-Site State Waters: The Project owner shall acquire, in fee or in easement, a parcel or parcels of land that includes state jurisdictional waters per <b>BIO-29 – Table 2</b> (see 2010 CEC PSPP Commission Decision, pp. 142 – 143), or the area of state waters directly or indirectly impacted by the final Project footprint. The Project footprint means all lands disturbed by construction and operation of the Palen Project, including all linears. The parcel or parcels comprising the ephemeral washes shall include desert dry wash woodland per <b>BIO-29 – Table 2</b>, or the acreage of desert dry wash woodland impacted by the final Project footprint at a 3:1 ratio. The terms and conditions of this acquisition or easement shall be as described in Condition of Certification <b>BIO 12</b>, and the timing associated with <b>BIO-29</b> (phasing). The current estimated costs are included in <b>BIO-29 – Table 3</b> (see 2010 CEC PSPP Commission Decision, p. 143, which would be updated to reflect current costs) located at the beginning of the Conditions of Certification subsection. Mitigation for impacts to state waters shall occur within the Chuckwalla, East Salton Sea, Hayfield, Rice, or portion of Whitewater within the NECO, Hydrologic Units (HUs) or the Palo Verde Watershed and be prioritized within the Chuckwalla HU in the Palen or adjacent watersheds.</p> <p>2. Security for Implementation of Mitigation: The Project owner shall provide financial assurances to the CPM and CDFG to guarantee that an adequate level of funding is available to implement the acquisitions and enhancement of state waters as described in this condition. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the CPM and CDFG in the form of an irrevocable letter of credit, a pledged savings account or Security prior to initiating ground-disturbing Project activities. Prior to submittal to the CPM, the Security shall be approved by the CPM, in consultation with CDFG, to ensure funding. The final amount due shall be determined by updated appraisals and the PAR analysis conducted pursuant to <b>BIO-12</b>.</p>	<p>No less than 30 days prior to the start of construction-related ground disturbance activities potentially affecting waters of the state, the Project owner shall provide written verification (i.e., through incorporation into the BRMIMP) to the CPM that the above best management practices will be implemented. The Project owner shall also provide a discussion of work in waters of the state in Annual Compliance Reports for the duration of the Project.</p> <p>No less than 30 days prior to beginning of Project ground-disturbing activities for each project phase as described in <b>BIO-29</b>, the Project owner shall provide to the CPM design drawings demonstrating how pre-development drainage patterns (location and volume of flows) to drainages downstream of the Project boundaries will be unaffected. At the same time the Project owner shall provide design drawings for temporary and permanent stream crossings.</p> <p>No less than 30 days prior to beginning Project ground-disturbing activities, the Project owner shall provide the form of Security in accordance with this condition of certification. No later than 7 days prior to beginning Project ground-disturbing activities, the Project owner shall provide written verification of the actual Security. The Project owner, or an</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>3. Preparation of Management Plan: The Project owner shall submit to the CPM and CDFG a draft Management Plan that reflects site- specific enhancement measures for the drainages on the acquired compensation lands. The objective of the Management Plan shall be to enhance the wildlife value of the drainages, and may include enhancement actions such as weed control, fencing to exclude livestock, or erosion control. 4. Code of Regulations: The Project owner shall provide a copy of this condition (Condition of Certification <b>BIO-21</b>) from the Energy Commission Decision to all contractors, subcontractors, and the Applicant's Project supervisors. Copies shall be readily available at work sites at all times during periods of active work and must be presented to any CDFG personnel upon demand. The CPM reserves the right to issue a stop work order or allow CDFG to issue a stop work order after giving notice to the Project owner and the CPM, if the CPM in consultation with CDFG, determines that the Project owner has breached any of the terms or conditions or for other reasons, including but not limited to the following:</p> <ul style="list-style-type: none"> <li>a. The information provided by the Applicant regarding impacts to waters of the state is incomplete or inaccurate;</li> <li>b. New information becomes available that was not known in preparing the terms and conditions; or</li> <li>c. The Project or Project activities as described in the Revised Staff Assessment have changed.</li> </ul> <p>5. Road Crossings at Streams. The Project owner shall preserve pre- development downstream flows and sediment transport in washes crossed by permanent roads by incorporating culverts and Arizona crossings at stream crossings. Arizona crossings are the preferred option and shall be employed wherever such crossings do not present a safety hazard and where the roadbed elevation allows the construction of such crossings. Drainages that have been graded for temporary construction access shall be restored to original contours and surface drainage patterns and shall be revegetated according to specifications in <b>BIO-8</b>.</p> <p>6. Best Management Practices: The Project owner shall also comply with the following conditions to protect drainages near the Project Disturbance Area:</p> <ul style="list-style-type: none"> <li>a. The Project owner shall minimize road building, construction activities and vegetation clearing within ephemeral drainages to the extent feasible.</li> <li>b. The Project owner shall not allow water containing mud, silt, or other pollutants from grading, aggregate washing, or other activities to enter ephemeral drainages or be placed in locations that may be subjected to high storm flows.</li> <li>c. The Project owner shall comply with all litter and pollution laws. All contractors, subcontractors, and employees shall also obey these laws, and it shall be the responsibility of the Project owner to ensure compliance.</li> <li>d. Spoil sites shall be located at least 30 feet from the boundaries and drainages or in locations that may be subjected to high storm flows, where spoils might be washed back into drainages.</li> <li>e. Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources, resulting from Project-related activities, shall be prevented from contaminating the soil and/or entering waters of the state. These materials, placed within or where they may enter a drainage, shall be removed immediately.</li> <li>f. No broken concrete, debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete or washings thereof, oil or petroleum products or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into, or placed where it may be washed by rainfall or runoff into, waters of the state.</li> </ul>	<p>approved third party, shall complete and provide written verification of the proposed compensation lands acquisition within 18 months of the start of Project ground-disturbing activities.</p> <p>The Project owner, or an approved third party, shall provide the CPM, BLM, CDFG, and USFWS with a management plan for the compensation lands and associated funds within 180 days of the land or easement purchase, as determined by the date on the title. The CPM shall review and approve the management plan, in consultation with CDFG and the USFWS.</p> <p>Within 90 days after completion of Project construction, the Project owner shall provide to the CPM, BLM, USFWS, and CDFG an analysis with the final accounting of the amount of jurisdictional state waters disturbed during Project construction.</p> <p>The Project owner shall provide written verification to the CPM, BLM, USFWS and CDFG that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient no later than 18 months of the start of Project ground-disturbing activities.</p> <p>The Project owner shall notify the CPM and CDFG, in writing, at least five days prior to initiation of Project ground-disturbing activities in jurisdictional state waters and at least five days prior to completion of Project activities in jurisdictional areas. The Project owner shall notify the CPM and CDFG of any change of conditions to the Project, impacts to state waters, or the mitigation efforts.</p>	

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>g. When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any drainage.</p> <p>h. No equipment maintenance shall occur within 150 feet of any ephemeral drainage where petroleum products or other pollutants from the equipment may enter these areas under any flow.</p> <p>7. Changes of Conditions. A notifying report shall be provided to the CPM and CDFG if a change of conditions is identified. As used here, change of condition refers to the process, procedures, and methods of operation of a Project; the biological and physical characteristics of a Project area; or the laws or regulations pertinent to the Project as defined below. A copy of the notifying change of conditions report shall be included in the annual reports or until it is deemed unnecessary by the CPM, in consultation with CDFG.</p> <p>a. Biological Conditions: a change in biological conditions includes, but is not limited to, the following: 1) the presence of biological resources within or adjacent to the Project area, whether native or non-native, not previously known to occur in the area; or 2) the presence of biological resources within or adjacent to the Project area, whether native or non-native, the status of which has changed to endangered, rare, or threatened, as defined in section 15380 of Title 14 of the California Code of Regulations.</p> <p>b. Physical Conditions: a change in physical conditions includes, but is not limited to, the following: 1) a change in the morphology of a river, stream, or lake, such as the lowering of a bed or scouring of a bank, or substantial changes in stream form and configuration caused by storm events; 2) the movement of a river or stream channel to a different location; 3) a reduction of or other change in vegetation on the bed, channel, or bank of a drainage, or 4) changes to the hydrologic regime such as fluctuations in the timing or volume of water flows in a river or stream.</p> <p>c. Legal Conditions: a change in legal conditions includes, but is not limited to, a change in Regulations, Statutory Law, a Judicial or Court decision, or the listing of a species, the status of which has changed to endangered, rare, or threatened, as defined in section 15380 of Title 14 of the California Code of Regulations.</p>		
<p><b>BIO-22, Decommissioning and Reclamation Plan:</b> Upon Project closure the Project owner shall implement a final Decommissioning and Reclamation Plan. The Decommissioning and Reclamation Plan shall include a cost estimate for implementing the proposed decommissioning and reclamation activities, and shall be consistent with the guidelines in BLM's 43 CFR 3809.550 et seq.</p>	<p>No fewer than 30 days prior to the start of Project-related ground disturbing activities or alternate date as agreed to with the BLM, the Project owner shall provide to the CPM (for review) and BLM (for review and approval) a draft Decommissioning and Reclamation Plan. The plan shall be finalized prior to the start of commercial operation and reviewed every five years thereafter and submitted to the CPM for review and to the BLM for approval. Modifications to the approved Decommissioning and Reclamation Plan shall be made only after approval from the BLM. The Project owner shall provide a copy of the approved Decommissioning and Reclamation Plan and any BLM approved revisions to the CPM.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p><b>BIO-23, Groundwater-Dependent Vegetation Monitoring:</b> The Project owner shall prepare a Groundwater-Dependent Vegetation Monitoring Plan for monitoring the Project effects of groundwater pumping on groundwater dependent vegetation. The monitoring shall encompass the area depicted in <i>Figure Soil and Water-3 (Project Only Revised Operational Water Supply End of 30 Years)</i> within the 0.1-foot drawdown polygon of the Model Predicted Drawdown (Galati &amp; Blek 2010i). The vegetation and groundwater data collected as part of the Plan shall be used to determine if remedial action is required, as described in <b>BIO-24</b>.</p> <p>The Project owner may forgo development of a Groundwater Dependent Vegetation Monitoring Plan, or may cease implementation of such a plan, by providing evidence to the CPM that the source of water for the GDEs is a shallow perched water-bearing zone rather than the regional groundwater system and that the shallow perched water-bearing zone is unrelated and not influenced by the regional groundwater system that the Project owner proposes to use for water as described below under 15a – 15d.</p> <p>The Project owner shall develop and implement a Groundwater- Dependent Vegetation Monitoring Plan (Plan) that meets the performance standards described below and includes the following components:</p> <ol style="list-style-type: none"> <li>1. Monitoring Objectives and Performance Standards. The objectives of the Plan shall be to monitor the Project effects of groundwater pumping on vegetation and groundwater-dependent ecosystems (GDEs) and, in conjunction with the remedial action described in <b>BIO-24</b>, to ensure that the Project groundwater pumping has a less than significant effect on biological resources. Monitoring shall be conducted at a level of detail adequate for detecting adverse effects, as reflected in vegetation attributes and groundwater levels in the shallow (alluvial) aquifer. The baseline for groundwater levels shall be the lowest baseline water level as measured at the Project site prior to the start of groundwater pumping.</li> <li>2. Location of Monitoring Plots. The monitoring plots shall be established within the area depicted in <i>Figure Soil and Water -3 (Project Only Revised Operational Water Supply End of 30 Years)</i> within the Model Predicted Drawdown showing the 0.1-foot drawdown polygon (Galati &amp; Blek 2010i). The majority of the plots shall be in the area north and east of the Project site, where groundwater-dependent ecosystems (GDEs) and the intersection of the ground surface and shallow groundwater are located, in the topographic lows in the valley.</li> <li>3. Monitoring Plots and Controls. Because of the variation in vegetation types and depth to groundwater within the predicted groundwater drawdown zone, the study design shall treat the monitoring plot with a corresponding control plot as a pair (versus comparing the mean of all treatment plots to the mean of all control plots). The “control” plots shall consist of the data collected at the same plot during the baseline (pre-disturbance) monitoring for a pre-disturbance vs. post-disturbance comparison. Appropriate statistical methods shall be used to analyze the differences between the control and monitoring plots (for example, a one-tailed paired-sample statistical test (Manly 2008)18).</li> <li>4. Off-Site Reference Plots: Off-site monitoring plots shall be established as reference sites to distinguish changes in plant vigor seen at the site from the effects of a region-wide drought. The off- site reference plots can be located within Chuckwalla Valley but shall be within areas that would not be affected hydrologically by groundwater pumping for the Project or other projects or agricultural operations. Off-site monitoring reference plots shall be located in the same general hydrologic and geologic setting (i.e., playa margins), in the same climatic region (Sonoran Desert region of California), and contain the same natural communities or vegetation alliances as those to which they are being compared. Impacts from pests and diseases, if present, must also be considered and excluded or adjusted for as part of the analysis. Data on climate and surface runoff in the study area shall be collected to identify “drought” conditions and correlate groundwater changes and weather changes.</li> </ol>	<p>At least 30 days prior to operation of project pumping wells, the Project owner shall submit to the CPM and BLM for review and approval a draft Groundwater-Dependent Vegetation Monitoring Plan (Plan). The final plan shall incorporate recommendations from the peer review and shall be submitted to the CPM and BLM no less than 15 days prior to the start of groundwater pumping.</p> <p>No less than 15 days prior to the start of groundwater pumping the Project owner shall submit as-built drawings indicating the location and depth of piezometers, and shall provide evidence that the piezometers are operational.</p> <p>Baseline groundwater and groundwater-dependent vegetation monitoring shall begin 15 days prior to construction and shall occur every year during the same one to two week time period in early spring (March) and post-monsoon (September).</p> <p>The First Annual Monitoring Report shall be provided to the CPM and BLM no later than January 31 following the first year of data collection, and shall include an assessment of whether the sampling design would provide statistically adequate monitoring data and whether modifications to the monitoring design would be needed. If the first Annual Monitoring Report recommends a revised sampling design, the Project owner shall submit the revised Plan to the CPM and BLM no later than March 1.</p> <p>Thereafter the Project owner shall submit a Groundwater-Dependent Vegetation Annual Monitoring Report to the CPM and BLM no later than January 31 of each year for the duration of Project operation.</p> <p>If the project owner elects to prepare a geologic and groundwater investigation (as described in Subsection 15 a-d of this condition) to determine if the source of water for the GDEs is a shallow perched water-bearing zone rather than the regional groundwater system, and that the shallow perched water-bearing zone is not hydraulically connected to the regional groundwater system that the Project owner proposes to use for water supply, the project owner shall submit the resumes of at least two independent, qualified peer reviewers 45 days prior to submittal of the report to the</p>	CEC



## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>5. Sample Size and Design The number of monitoring sites shall be established using appropriate statistical methods (for example, by a "priori power analysis" (Elzinga et al. 1998)) and shall be sufficient to achieve adequate (90%) statistical power. Following collection of the baseline data a statistical analysis shall be conducted to refine the power analysis and evaluate the adequacy of the sampling design. If the analysis of baseline data indicates that the sampling design is insufficient to achieve adequate statistical power, the design shall be modified (for example, by adding additional monitoring sites).</p> <p>6. Water Table Monitoring. The Project owner shall install piezometers at each of the dominant vegetation community types within or near the monitoring plots. The number, location, depth and monitoring frequency of the piezometers shall be sufficient to establish the effect of Project groundwater pumping on the shallow aquifer water levels. At a minimum, each piezometer shall be monitored twice per year, in early spring (March) and post-monsoon (September). The piezometers shall be designed to monitor the maximum expected fluctuation in the water table and to last the duration of the Project. Data collected from the Project wells and piezometers for <b>SOIL &amp; WATER-4</b> (Groundwater Level Monitoring, Mitigation, and Reporting) and S&amp;W-6 (groundwater monitoring for the evaporation ponds and land treatment unit) shall be used to refine the modeling of the predicted groundwater drawdown and zone of influence after two years of data collection following the start of groundwater production. The Project owner shall submit to the CPM, for review and approval, a report on the results of the refined modeling. The report shall include all calculations and assumptions made in development of report data and interpretations, and all well monitoring data and piezometer data collected and used in the calculations. If the results indicate that the drawdown and zone of influence is greater than the effect predicted in the GRI, and the GDE are found to be drawing groundwater that is hydraulically connected to the regional groundwater system, then the project owner will submit a revised monitoring plan for GDE areas outside of the original monitoring area.</p> <p>7. Soil Monitoring. Soil salinity and pH shall be monitored annually at every monitoring plot. The Plan shall describe the monitoring devices and techniques used to collect and interpret this data, relative to ecosystem function. One soil core sample per community type shall be collected as part of the baseline data to establish the approximate rooting depth of the phreatophytes, and thereafter shall be repeated every five years. The coring method must provide a continuous core that will provide visual examination of roots and root nodules, soil profile, and soil moisture.</p> <p>8. Baseline and Long-term Data Collection. At a minimum, baseline data shall be collected at all monitoring sites prior to the start of pumping; however, vegetation data collected from sites farther from the nearest wells will allow for the collection of multiple years of "pre-disturbance" data. Although the Project proposes to begin construction (and pumping) by December 2010, it appears that the effects of pumping would not reach the areas supporting the GDEs or phreatophytic plants for several years (see C.9 <b>Soil and Water Resources</b>). Because the proposed well in the northeast portion of the Project (Soil &amp; Water Figure 1, Galati &amp; Blek 2010i) is located in very close proximity to known phreatophytes, this well shall not be used within the first 3 years of the Project in order to allow an adequate period for baseline data collection in the area northeast of the Project. Subject to approval by the CPM, if groundwater pumping ceases or is replaced by other water sources, groundwater and vegetation monitoring shall continue for a period of 5 years or until refined modeling indicates that the groundwater levels have returned to baseline levels and the decline in plant vigor has been restored to pre-disturbance conditions.</p> <p>9. Target Vegetation Population. The monitoring sites shall include GDEs and other vegetation potentially affected by the drawdown that occur within the zone of influence. The following phreatophytes have been documented to occur around Palen Lake: honey mesquite (<i>Prosopis glandulosa</i>); iodine bush (<i>Allenrolfea occidentalis</i>), bush seep-weed (<i>Suaeda moquini</i>), jackass clover (<i>Wislizenia refracta</i>), four-wing saltbush (<i>Atriplex canescens</i>), allscale (<i>A. polycarpa</i>), spinescale (<i>A. spinifera</i>), a potentially new taxon of saltbush (<i>Atriplex</i> sp. nov. Andre), ironwood (<i>Olneya</i></p>	<p>CPM and BLM for review and approval. The Project owner must submit the results of their investigation, subject to review and approval by the CPM, prior to the start of construction or Project groundwater use.</p> <p>If the refined modeling conducted according subsection 6 of this condition indicates that the drawdown and zone of influence is greater than the effect predicted in the GRI, and the GDE are found to be drawing groundwater that is hydraulically connected to the regional groundwater system, then the Project owner shall submit a revised monitoring plan for GDE areas outside of the original monitoring area. The Revised Monitoring Plan shall be submitted no later than January 31 in the third year following the start of groundwater pumping and well monitoring.</p>	

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p><i>tesota</i>), palo verde (<i>Cercidium microphyllum</i>), cat's claw (<i>Acacia greggii</i>), and smoke tree (<i>Psoralea arguta</i>). The final number of each community type sample needed shall be based on the <i>priori</i> power test conducted after the first year of baseline data collection.</p> <p>10. Fine-Scale Vegetation Mapping. Within the monitoring sites vegetation shall be mapped to the alliance level, consistent with classification protocol in the <i>Manual of California, 2nd edition</i> (Sawyer et al. 2009) but any important associations shall also be mapped. Mapping shall be done using minimum 1 meter resolution color orthophotos or higher resolution infrared imagery. The mapping shall also be used to determine the acreages of GDEs and establish the amount of security to be deposited in the event that adverse effects are detected during the monitoring. Boundaries of the permanent plots and any off-site reference sites shall be recorded using GPS technology and depicted on the geo-referenced aerials. GIS shapefiles and metadata shall be submitted along with the draft Plan and any subsequent revisions to the Plan (i.e., following the collection of baseline data and subsequent power analysis).</p> <p>11. Guidelines for the Monitoring Plan. The Groundwater-Dependent Vegetation Monitoring Plan (Plan) shall be prepared with guidance from <i>Measuring and Monitoring Plant Populations</i> (Elzinga et al. 1998). The Plan shall provide a detailed description of each of the following components:</p> <ul style="list-style-type: none"> <li>a. Sampling Design. The sampling design shall include a description of: a) the populations (vegetation types) sampled; b) number, size, and shape of the sampling units; c) layout of the sampling units; d) methods for permanently marking plots in the field; e) monitoring schedule/frequency; f) vegetation and other attributes sampled; and g) sampling objectives (target/threshold, change/trend-based) for each attribute.</li> <li>b. Habitat Function and Values. The Plan shall describe the hydrologic, geologic/geomorphic, geochemical, biological and ecological characteristics of the GDEs, and shall also describe whether species are obligate or facultative; root growth and water acquisition characteristics; morphological adaptations to the desert environment; reproduction and germination characteristics; general and micro-habitat preferences; obligate or facultative halophytes and phreatophytes; role in the morphology of dunes; and importance to wildlife, etc.</li> <li>c. Field techniques for measuring vegetation. This will include the vegetation (or other) attributes selected based on a demonstrated knowledge of the biology and morphology of the species, and include a discussion of the limitations involved in each measurement. Examples of appropriate field techniques for measuring drought response include: percent dieback; live crown density; crown height and width, percent cover of live (versus dead or residual) vegetation, percent cover/frequency of associated species; percent composition of native versus non-native species; and percent cover based on wetland status codes (OBL, FACW, FAC, FACU, UPL19) and status as phreatophytes or halophytes. Photo monitoring shall not be considered an acceptable monitoring method but may be useful to conduct periodically (e.g., every 3 to 5 years).</li> <li>d. Data Management. Including how the data will be recorded in the field (e.g., using a GPS data dictionary), processed and stored.</li> <li>e. Training of personnel. Describe minimum standards for training and monitoring personnel.</li> <li>f. Statistical analysis. Describe statistical methods used to analyze the monitoring data (incorporating the minimum standards for statistical power and error rate described above).</li> </ul> <p>12. Peer Review of the Plan. The draft Plan shall undergo a peer review by recognized experts, which shall include one or more scientists with expertise in: the preparation of monitoring plans for plant populations; the physiological responses of desert phreatophytes to drought stress; assessing the effects of groundwater withdrawal on vegetation in the desert</p>		

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>region; and biostatistics. The Project owner shall provide the resumes of suggested peer reviewers to the CPM for review and approval.</p> <p>13. Annual Monitoring Report. Annual Monitoring Reports shall be submitted to the CPM and BLM and shall include, at a minimum: a) names and contact information for the responsible parties and monitoring personnel; b) summaries of the results of the monitoring as required in <b>Soil&amp;Water-4 and Soil&amp;Water-6</b>; c) piezometer monitoring results, and a comparison of predicted versus actual water table declines; d) summary of the results of vegetation, groundwater, and soil monitoring data compared to the baseline data for each plot (pre- versus post-disturbance comparison); e) description of sampling and monitoring techniques used for each attribute; f) description of the data management and statistical analysis; g) photos; h) conclusions and recommendations for remedial action, if the monitoring data indicates that the threshold described below has been met. The first Annual Monitoring Report shall include an appropriate statistical analysis using the first year baseline monitoring data to assess whether the sampling design was adequate to provide statistically meaningful data, as described above. If warranted, the first year Annual Monitoring Report shall include recommendations for revisions to the Plan based on this analysis.</p> <p>14. Threshold for Remedial Action: The Project owner shall implement remedial action, as described in Condition of Certification <b>BIO-24</b>, if the monitoring described in <b>BIO-23</b> detects a decline in plant vigor of 20 percent or more compared to the same plots pre-disturbance AND also detects a decline in the alluvial (shallow) aquifer confirmed by two consecutive annual water monitoring events in any amount greater than the lowest baseline water level as measured prior to groundwater pumping. If regional drought, off-site pumping or other activities unrelated to the Project are also contributing to the decline in water table, the Project owner shall only be responsible for the portion of the effect that can be statistically demonstrated to be the result of Project pumping. To determine whether declines in plant vigor are related to Project pumping as opposed to regionwide drought or offsite pumping conditions the Project owner shall install a network background monitoring piezometers and incorporate these data in the assessment of Project-related effects on GDEs.</p> <p>15. To understand the source of the water for the GDEs, the Project owner shall prepare a groundwater investigation work plan for submittal to the CPM that will outline steps to determine if the source of water for the GDEs is a shallow perched water-bearing zone rather than the regional groundwater system, and that the shallow perched water-bearing zone is not hydraulically connected to the regional groundwater system. The groundwater investigation will be comprised of the following components:</p> <ul style="list-style-type: none"> <li>a. A continuous soil coring program at five locations to be identified based on field mapping of GDEs in the area shown on the Figure <i>Soil and Water-3 (Project Only Revised Operational Water Supply End of 30 Years)</i> within the 0.1-foot drawdown polygon of the Model Predicted Drawdown (Galati &amp; Blek 2010i). One of the five borings will be drilled adjacent to a GDE containing mesquite, and the other four located to provide an assessment of the range of plant communities within GDEs in the area of interest (i.e., to assess the variability of GDE plant type water requirements and root zone depth).</li> <li>b. The soil cores shall extend a minimum of 20 feet below the deepest root zones of the GDEs investigated to demonstrate separation between the shallow and regional water zones. At a minimum the soil cores shall show that 20 feet of unsaturated conditions are present below the deepest root zones of the plant communities investigated. The soil cores will be logged by a professional geologist in the State of California, and the coring program will be overseen by a qualified biologist with experienced in the plant communities identified within each GDE.</li> <li>c. A sampling plan for selective analysis of soil moisture content and saturation will also be conducted for each soil core advanced adjacent to a GDE. The number and frequency of soil samples shall be established to confirm field</li> </ul>		

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>observations of soil moisture content in the shallow water-bearing zone, through the root zone and in the deeper sediments below the root zone above the regional water table. Soil samples shall be analyzed for moisture content after ASTM Method D2216.</p> <p>d. Depending on the results of the soil coring program, piezometers may be installed as monitoring points for the regional water table and to monitoring changes in the shallow water-bearing zone from Project pumping. In the report of results from the soil coring program, a water-level monitoring program shall be proposed if it is shown that the regional water table is in direct hydraulic connection to the source of water to the GDE's. If the field data clearly shows an unsaturated zone of 20 feet or more below the deepest root zones of the GDEs, then piezometers will not be installed.</p> <p>If the results of the pre-construction field observations and soil sampling demonstrate 20 feet or more of unsaturated sediments between the deepest root zones of the GDEs and the regional water table, there will be no requirements to implement any of the underlying conditions as provided for in <b>BIO-23</b> and <b>BIO-24</b>, as sufficient evidence will have been provided to demonstrate that the groundwater is not the source for the GDE's.</p> <p>If the refined modeling of the predicted groundwater drawdown and zone of influence after two years of data collection (following the start of groundwater production), as described in Subsection 6 of this condition and in <b>SOIL&amp;WATER-4</b> and <b>SOIL&amp;WATER-6</b>, indicates the drawdown or zone of influence would be greater than predicted in the Project owner's Groundwater Resources Investigation (GRI), and the GDE are found to be drawing groundwater that is hydraulically connected to the regional groundwater system, then the project owner will submit a revised monitoring plan for GDE areas outside of the original monitoring area.</p>		
<p><b>BIO-24, Remedial Action and Compensation for Adverse Effects to Groundwater-Dependent Biological Resources:</b> If monitoring detects Project-related adverse impacts to groundwater dependent ecosystems (GDEs), as described in <b>BIO-23</b> and the impacts are shown to be the result of a decline in the regional groundwater table due to Project pumping, the Project owner shall determine which well(s) are the source of the adverse impacts and shall implement remedial measures as outlined below. If regional drought, off-site pumping or other activities unrelated to the Project are also contributing to the decline in water table, the Project owner shall only be responsible for the portion of the effect that can be demonstrated to be the result of Project pumping. The remedial measures shall be implemented with the objective of restoring the groundwater levels to the baseline described in <b>BIO-23</b>, and shall compensate for impacts to GDEs with off-site habitat acquisition or restoration. The Project owner shall do all of the following:</p> <p>1. Modification and/or Cessation of Pumping: The Project owner shall provide to the CPM evidence based on groundwater monitoring and modeling indicating which wells are likely to be causing adverse impacts to GDEs. The Project owner shall initially modify operation of those wells to reduce the offsite drawdown in the areas of the GDEs.</p> <p>Remedial Action Plan: The objective of remedial action shall be restoration of the spring groundwater table in the alluvial (shallow) aquifer to baseline levels, as described in <b>BIO-23</b>. The Remedial Action Plan shall include one or more of the following measures: 1) Begin rotational operation of the site water supply wells reducing pumping in wells that are the most proximal to the GDEs, 2) reducing the pumping rate in the wells that have been identified as the cause of the drawdown in the area of the GDEs, 3) focus pumping on wells on the southern portion of the project site away from the GDEs 4) cease operation of the well(s) that are the cause of the drawdown. Groundwater water level monitoring shall increase to a frequency necessary to document change and recovery in the drawdown from the changes in the pumping program.</p>	<p>No more than 30 days following submission of the Groundwater Dependent Vegetation Annual Monitoring Report the Project owner shall submit to the CPM for review and approval a draft Remedial Action Plan if that report indicates that the threshold for remedial action as described in <b>BIO-23</b> has been met. At the same time the Project owner shall submit written evidence that the Project wells responsible for impacts to groundwater levels and GDEs have modified their operation or ceased operation.</p> <p>A final Remedial Action Plan shall be submitted to the CPM within 30 days of receipt of the CPM's comments on the draft plan. No later than 6 months following approval of the final Remedial Action Plan, the Project owner shall provide to the CPM written documentation of the effectiveness of the completed remedial action.</p> <p>No more than 30 days following submission of the Groundwater-Dependent Vegetation Annual Monitoring Report, the Project owner shall provide to the CPM a final accounting of the amount of GDE habitat affected by Project groundwater pumping.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>The Remedial Action Plan shall include a water level monitoring program of sufficient frequency to document changes in operation of the water supply wells, and demonstrate that the water table has been restored to baseline levels.</p> <p>The Project owner shall use the following guidelines for determining if an ecosystem (or species) is phreatophytic (Brown et al 2007; LeMaite et al 1999; Froend &amp; Loomes 2004):</p> <ol style="list-style-type: none"> <li>It is not known or documented to depend on groundwater, based on scientific literature or expert opinion (local knowledge can be useful in making a determination as some species' dependence varies by setting);</li> <li>The species are not known to have roots extending over a meter in depth;</li> <li>The community does not occur in an area where the water table is known to be 'near' the surface (relative to the documented rooting depths of the species);</li> <li>The herbaceous or shrub vegetation is not still green and/or does not have a high leaf area late in the dry season (compared to other dry areas in the same watershed that do not have access to groundwater).</li> </ol> <p>2. Compensate for Loss of Ecosystem Function. If the decline in the water table in the alluvial (shallow) aquifer is accompanied by a corresponding decline in plant vigor greater than 20 percent (as described in BIO-23), the Project owner shall compensate for the loss of habitat functions and values in the affected groundwater- dependent ecosystems. The amount of compensation shall be at a 3:1 ratio based on area of affected area, using mapping as described in <b>BIO-23</b>. The Project owner shall acquire, in fee or in easement, a parcel or parcels of land that include an amount of groundwater-dependent vegetation that is of the same habitat-type as the community affected (e.g., mesquite woodland, alkali sink scrubs, or microphyll woodland) and of an equal or greater habitat quality. The compensation lands shall be located within the watersheds encompassing the Chuckwalla or Palen valleys. As an alternative to habitat compensation, the Project owner may submit a plan that achieves restoration of lost habitat function and value at another location within the Chuckwalla Groundwater Basin that contains the same habitats as those affected.</p> <ol style="list-style-type: none"> <li>Review and Approval of Compensation Lands Prior to Acquisition or Restoration. The Project owner shall submit a formal acquisition proposal to the CPM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands in relation to the criteria listed above. Approval from the CPM shall be required for acquisition of all compensatory mitigation parcels.</li> <li>Preparation of Management Plan: The Project owner shall submit to the CPM and CDFG a draft Management Plan that reflects site-specific enhancement measures for the acquired compensation lands. The objective of the Management Plan shall be to maintain the functions and values of the acquired GDE plant communities and may include enhancement actions such as weed control, fencing to exclude livestock, or erosion control.</li> <li>Delegation of Acquisition. The responsibility for acquisition of compensation lands may be delegated to NFWF or another third party other than NFWF, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the Energy Commission. Such delegation shall be subject to approval by the CPM prior to land acquisition, enhancement or management activities.</li> </ol>	<p>No more than 6 months following submission of the Groundwater-Dependent Vegetation Annual Monitoring Report the Project owner shall submit a formal acquisition or restoration proposal to the CPM, describing the mitigation parcels intended for purchase or restoration. The acquisition/restoration proposal shall describe how the proposed parcels meet the acquisition or restoration criteria described in this condition.</p> <p>No fewer than 90 days prior to compensatory acquisition or restoration, the Project owner shall submit to the CPM and obtain CPM approval of any agreements to delegate land acquisition to an approved third party, or to manage compensation lands; such agreement shall be executed and implemented no more than months following approval of the acquisition proposal. The Project owner shall provide written verification to the CPM that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient no later than 18 months from submission of the Groundwater-Dependent Vegetation Annual Monitoring Report.</p>	

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p><b>BIO-25, Golden Eagle Inventory and Monitoring:</b> The Project owner shall implement the following measures to avoid or minimize Project-related construction impacts to golden eagles.</p> <ol style="list-style-type: none"> <li>1. Annual Inventory During Construction. For each calendar year during which construction will occur an inventory shall be conducted to determine if golden eagle territories occur within one mile of the Project boundaries. Survey methods for the inventory shall be as described in the Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations (Pagel et al. 2010) or more current guidance from the USFWS.</li> <li>2. Inventory Data: Data collected during the inventory shall include at least the following: territory status (unknown, vacant, occupied, breeding successful, breeding unsuccessful); nest location, nest elevation; age class of golden eagles observed; nesting chronology; number of young at each visit; digital photographs; and substrate upon which nest is placed.</li> <li>3. Determination of Unoccupied Territory Status: A nesting territory or inventoried habitat shall be considered unoccupied by golden eagles ONLY after completing at least 2 full surveys in a single breeding season. In circumstances where ground observation occurs rather than aerial surveys, at least 2 ground observation periods lasting at least 4 hours or more are necessary to designate an inventoried habitat or territory as unoccupied as long as all potential nest sites and alternate nests are visible and monitored. These observation periods shall be at least 30 days apart for an inventory, and at least 30 days apart for monitoring of known territories.</li> <li>4. Monitoring and Adaptive Management Plan: If an occupied nest is detected within one mile of the Project boundaries, the Project owner shall prepare and implement a Golden Eagle Monitoring and Adaptive Management Plan for the duration of construction to ensure that Project construction activities do not result in injury or disturbance to golden eagles. The monitoring methods shall be consistent with those described in the Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations (Pagel et al. 2010) or more current guidance from the USFWS. The Monitoring and Management Plan shall be prepared in consultation with the USFWS. Triggers for adaptive management shall include any evidence of Project-related disturbance to nesting golden eagles, including but not limited to: agitation behavior (displacement, avoidance, and defense); increased vigilance behavior at nest sites; changes in foraging and feeding behavior, or nest site abandonment. The Monitoring and Adaptive Management Plan shall include a description of adaptive management actions, which shall include, but not be limited to, cessation of construction activities that are deemed by the Designated Biologist to be the source of golden eagle disturbance.</li> </ol>	<p>No fewer than 30 days from completion of the golden eagle inventory the project owner shall submit a report to the CPM, BLM, CDFG, and USFWS documenting the results of the inventory.</p> <p>If an occupied nest is detected within one mile of the Project boundary during the inventory the Project owner shall contact staff at the USFWS Carlsbad Office and CDFG within one working day of detection of the nest for interim guidance on monitoring and nest protection. The project owner shall provide the CPM, CDFG, and USFWS with the final version of the Golden Eagle Monitoring and Management Plan within 30 days after detection of the nest. This final Plan shall have been reviewed and approved by the CPM in consultation with USFWS and CDFG.</p>	CEC
<p><b>BIO-26, Evaporation Pond Netting and Monitoring:</b> The Project owner shall cover the evaporation ponds prior to any discharge with 1.5-inch mesh netting designed to exclude birds and other wildlife from drinking or landing on the water of the ponds. Netting with mesh sizes other than 1.5-inches may be installed if approved by the CPM in consultation with CDFG and USFWS. The netted ponds shall be monitored regularly to verify that the netting remains intact, is fulfilling its function in excluding birds and other wildlife from the ponds, and does not pose an entanglement threat to birds and other wildlife. The ponds shall include a visual deterrent in addition to the netting, and the pond shall be designed such that the netting shall never contact the water. Monitoring of the evaporation ponds shall include the following:</p> <ol style="list-style-type: none"> <li>1. Monthly Monitoring. The Designated Biologist or Biological Monitor shall regularly survey the ponds at least once per month starting with the first month of operation of the evaporation ponds. The purpose of the surveys shall be to</li> </ol>	<p>No less than 30 days prior to operation of the evaporation ponds the project owner shall provide to the CPM as-built drawings and photographs of the ponds indicating that the bird exclusion netting has been installed. For the first year of operation the Designated Biologist shall submit quarterly reports to the CPM, BLM, CDFG, and USFWS describing the dates, durations and results of site visits conducted at the evaporation ponds. Thereafter the Designated Biologist shall submit annual monitoring reports with this information. The quarterly and annual reports shall fully describe any</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>determine if the netted ponds are effective in excluding birds, if the nets pose an entrapment hazard to birds and wildlife, and to assess the structural integrity of the nets. The monthly survey shall be conducted in 1 day for a minimum of 2 hours following sunrise (i.e., dawn), a minimum of 1 hour mid-day (i.e., 1100 to 1300), and a minimum of 2 hours preceding sunset (i.e., dusk) in order to provide an accurate assessment of bird and wildlife use of the ponds during all seasons. Surveyors shall be experienced with bird identification and survey techniques. Operations staff at the Project site shall also report finding any dead birds or other wildlife at the evaporation ponds to the Designated Biologist within 1 day of the detection of the carcass. The Designated Biologists shall report any bird or other wildlife deaths or entanglements within 2 days of the discovery to the CPM, CDFG, and USFWS.</p> <p>2. Dead or Entangled Birds. If dead or entangled birds are detected, the Designated Biologist shall take immediate action to correct the source of mortality or entanglement. The Designated Biologist shall make immediate efforts to contact and consult the CPM, CDFG, and USFWS by phone and electronic communications prior to taking remedial action upon detection of the problem, but the inability to reach these parties shall not delay taking action that would, in the judgment of the Designated Biologist, prevent further mortality of birds or other wildlife at the evaporation ponds.</p> <p>3. Quarterly Monitoring. If after 12 consecutive monthly site visits no bird or wildlife deaths or entanglements are detected at the evaporation ponds by or reported to the Designated Biologist, monitoring, as described in paragraph 1, can be conducted on a quarterly basis.</p> <p>4. Biannual Monitoring. If after 12 consecutive quarterly site visits no bird or wildlife deaths or entanglements are detected by or reported to the Designated Biologist and with approval from the CPM, USFWS, and CDFG, future surveys may be reduced to 2 surveys per year, during the spring nesting season and during fall migration. If approved by the CPM, USFWS, and CDFG, monitoring outside the nesting season may be conducted by the Environmental Compliance Manager.</p> <p>5. Modification of Monitoring Program. CDFG or USFWS may submit a request for modifications to the evaporation pond monitoring program based on information acquired during monitoring, and may also suggest adaptive management measures to remedy any problems that are detected during monitoring or modifications if bird impacts are not observed. Modifications to the evaporation pond monitoring described above and implementation of adaptive management measures shall be made only after approval from the CPM, in consultation with USFWS and CDFG.</p>	<p>bird or wildlife death or entanglements detected during the site visits or at any other time, and shall describe actions taken to remedy these problems. The annual report shall be submitted to the CPM, BLM, CDFG, and USFWS no later than January 31 of every year for the life of the project.</p>	
<b>BIO-27:</b> <i>Staff and the Applicant have agreed to delete this condition.</i>		
<p><b>BIO-28, In-Lieu Fee Mitigation Option:</b> The Project owner may choose to satisfy its mitigation obligations by paying an in-lieu fee instead of acquiring compensation lands, pursuant to Fish and Game code sections 2069 and 2099 or any other applicable in-lieu fee provision, provided that the Project's in-lieu fee proposal is found by the Commission to mitigate the impacts identified herein. If the in-lieu fee proposal is found by the Commission to be in compliance, and the Project Owner chooses to satisfy its mitigation obligations through the in-lieu fee, the Project Owner shall provide proof of the in-lieu fee payment to the CPM prior to construction related ground disturbance.</p>	<p>If electing to use this provision, the Project owner shall notify the Commission and all parties to the proceeding that it would like a determination that the Project's in-lieu fee proposal would mitigate for the impacts identified herein. Prior to construction related ground disturbance the Project Owner shall provide proof of the in lieu fee payment to the CPM.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p><b>BIO-29, Project Construction Phasing Plan:</b></p> <p>The Project Owner shall provide compensatory mitigation for the total Project Disturbance Area and may provide such mitigation in two phases as described in Figure 1 in the Supplement to the Petition For Amendment dated February 8, 2013. For purposes of this condition, the Project Disturbance Area means all lands disturbed in the construction and operation of the PSEGS or its phases, including all linears and ancillary facilities, as well as undeveloped areas inside the Project's boundaries that would no longer provide viable long-term habitat.</p> <p>The disturbance area for each project Phase and resource type is provided in <b>BIO-29</b> Table 1 on page 120 of the February 8, 2013 Revised Plan of Development for the PSEGS (Palen Solar III, LLC, 2013) (the "POD"). Mitigation is shown in <b>BIO-29</b> Table 2 (POD, p. 121), and mitigation security is shown in <b>BIO-29 Table 3</b>, below. This table shall be refined prior to the start of each construction phase with the disturbance area adjusted to reflect the final Project footprint for each phase. Prior to initiating each phase of construction the Project owner shall submit the actual construction schedule, a figure depicting the locations of proposed construction and amount of acres to be disturbed. Mitigation acres are calculated based on the compensation requirements for each resource type as described in the above Conditions of Certification – <b>BIO-12</b> (Desert Tortoise), <b>BIO-20</b> (Mojave Fringe-toed Lizard), <b>BIO-18</b> (Western Burrowing Owl), and <b>BIO-22</b> (State Waters). Compensatory mitigation for each phase shall be implemented according to the timing required by each condition. (See BIO-29 Table 1, Table 2, and Table 3 in the CEC Amendment to Final Decision) (see 2010 CEC PSPP Commission Decision, pp. 141- 143, which would be updated to reflect proposed area of disturbance and current costs).</p>	<p>The Project owner shall not disturb any area outside of the area that has been approved for that phase of construction and for the previously approved phases of construction.</p> <p>No less than 30 days prior to the start of desert tortoise clearance surveys for each phase, the Project owner shall submit a description of the proposed construction activities for that phase to CDFG, USFWS and BLM for review and to the CPM for review and approval. The description for each phase shall include the proposed construction schedule, a figure depicting the locations of proposed construction, and amount of acres of each habitat type to be disturbed.</p> <p>No less than 30 days prior to beginning Project ground-disturbing activities for each phase, the Project owner shall provide the form of Security in accordance with this Condition of Certification in the amounts described in <b>BIO-29 Table 3</b>. No later than 7 days prior to beginning Project ground-disturbing activities for each phase, the Project owner shall provide written verification of the actual Security. The Project owner, or an approved third party, shall complete and provide written verification of the proposed compensation lands acquisition within 18 months of the start of Project ground-disturbing activities for each phase.</p>	CEC
<p><b>WIL-1: Desert Kit Fox Protection.</b> To avoid direct impacts to desert kit fox from disease transmission, the Applicant shall implement the following measures:</p> <ol style="list-style-type: none"> <li><b>Baseline Kit Fox Population and Health Survey:</b> A qualified biologist familiar with desert kit foxes shall direct a baseline study of desert kit fox populations on the Project site and the anticipated relocation/receiving area(s) at least 60 days prior to initiation of construction activities. The study shall characterize the population size and distribution of the kit fox population on the site and receiving areas. The receiving area would be determined following the initial survey of the Project site, and based on the location and number of Project site kit foxes. The initial survey to locate, map and describe kit fox burrows may occur as part of the desert tortoise clearance, an intensive survey that is completed using two passes spaced at 5 m intervals. Pending CDFW approval, the baseline survey may include a testing component in which the researchers trap and test a representative subsample of the population for canine distemper, and generally describe animal health on the site and receiving areas. The baseline kit fox census and health findings shall be summarized in a report that informs will be used to inform site management of kit foxes during preconstruction surveys. Alternately, the Applicant may coordinate with and fund studies by federal or State wildlife health officials (e.g., the CDFW Wildlife Investigations Lab) to establish baseline health conditions at the site and in the receiving area.</li> <li><b>Prepare Desert Kit Fox Management Plan:</b> At least 45 days prior to construction, the Applicant shall prepare a Desert Kit Fox Management Plan that: 1) incorporates baseline desert kit fox survey and health survey findings into a cohesive management strategy that minimizes disease risk to kit fox populations; 2) provides a program for tagging, radio-</li> </ol>	<p>A qualified biologist familiar with desert kit foxes shall direct a baseline study of desert kit fox populations on the Project site and the anticipated relocation/receiving area(s) at least 60 days prior to initiation of construction activities.</p>	BLM



## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>BIOLOGICAL RESOURCES (cont.)</b>		
<p>tracking and monitoring of a subset of kit foxes that are anticipated to be during the construction phase to provide understanding of how displacement affects displaced foxes, and foxes in the receiving area.; 3) specifically identifies preconstruction survey methods for kit foxes and large carnivores (e.g., badgers) in the Project area; 4) describes preconstruction and construction-phase relocation methods from the site, including the possibility for passive and active relocation from the site (and outlines identified CDFW permit and MOU requirements for active relocation), and; 5) coordinates survey findings prior to and during construction to meet the information needs of wildlife health officials in monitoring the health of kit fox populations. The Plan shall include contingency measures that would be performed if canine distemper were documented in the Project area or in potential relocation areas, and measures to address potential kit fox reoccupancy of the site (as documented at the Genesis site). The contents and requirements of the Plan shall be subject to review and approval by the BLM Authorized Officer (BLM AO) in consultation with USFWS and CDFW.</p> <p>3. <b>Implement Desert Kit Fox Management Plan:</b> If canine distemper is not identified in the Project area or relocation areas during baseline surveys, the mitigation strategy may utilize passive means or active means with appropriate CDFW authorization to relocate kit foxes from the site as described in APM BIO-17.</p> <p>4. <b>Measures to Minimize Canine Disease Transmission.</b> The approach below assumes that canine distemper is not detected during baseline surveys. Additionally, the following measures are required to reduce the likelihood of distemper transmission:</p> <ul style="list-style-type: none"> <li>i. No pets shall be allowed on the site prior to or during construction, with the possible exception of kit fox scat detection dogs during preconstruction surveys, and then only with prior CDFW approval;</li> <li>ii. Any kit fox hazing activities that include the use of animal repellents such as coyote urine must be cleared through CDFW prior to use, and;</li> <li>iii. Any sick or diseased kit fox, or documented kit fox mortality shall be reported to CDFW and the BLM AO within 24 hours of identification. If a dead kit fox is observed, it shall be retained and protected from scavengers until CDFW determines if the collection of necropsy samples is justified.</li> </ul>		
<b>CULTURAL RESOURCES</b>		
<p><b>CUL-1, Prehistoric Trails Network Cultural Landscape (PTNCL) Documentation and NRHP Nomination:</b> The project owner shall contribute to a special fund set up by the Energy Commission and/or BLM to finance the completion of the PTNCL Documentation and Possible NRHP Nomination program presented in the Palen Solar Power Project (PSPP) Revised Staff Assessment (RSA).</p> <p>The amount of the contribution shall be \$35 per acre that the project encloses or otherwise disturbs. Any additional contingency contribution is not to exceed an amount totaling 20 percent of the original contribution. The contribution to the special fund may be made in installments at the approval of the CPM, with the first installment to constitute one-third of the total original contribution amount. If a project is not certified, or if a project owner does not build the project, or, if for some other reason deemed acceptable by the CPM, a project owner does not participate in funding the PTNCL documentation and possible NRHP nomination program, the other project owner(s) may consult with the CPM to adjust the scale of the PTNCL documentation and possible NRHP nomination program research activities to match available funding. A project owner that funds the PTNCL documentation and possible NRHP nomination program, then withdraws, will be able to reclaim their monetary contribution, to be refunded on a prorated basis.</p>	<p>No later than 10 days after receiving notice of the successful transfer of funds for any installment to the Energy Commission's and/or BLM's special PTNCL fund, the project owner shall submit a copy of the notice to the Energy Commission's Compliance Project Manager (CPM).</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>CULTURAL RESOURCES (cont.)</b>		
<p><b>CUL-2, Desert Training Center California-Arizona Maneuver Area Cultural Landscape (DTCCL) Documentation and Possible NRHP Nomination:</b> The project owner shall contribute to a special fund set up by the Energy Commission and/or BLM to finance the completion of the Documentation and Possible NRHP Nomination program presented in the PSPP RSA. The amount of the contribution shall be \$25 per acre that the project encloses or otherwise disturbs. Any additional contingency contribution is not to exceed an amount totaling 20 percent of the original contribution. The contribution to the special fund may be made in installments at the approval of the CPM, with the first installment to constitute one-third of the total original contribution amount. If a project is not certified, or if a project owner does not build the project, or, if for some other reason deemed acceptable by the CPM, a project owner does not participate in funding the DTCCL documentation and possible NRHP nomination program, the other project owner(s) may consult with the CPM to adjust the scale of the DTCCL documentation and possible NRHP nomination program research activities to match available funding. A project owner that funds the DTCCL documentation and possible NRHP nomination program, then withdraws, will be able to reclaim their monetary contribution, to be refunded on a prorated basis.</p>	<p>No later than 10 days after receiving notice of the successful transfer of funds for any installment to the Energy Commission's and/or BLM's special DTCCL fund, the project owner shall submit a copy of the notice to the CPM.</p>	CEC
<p><b>CUL-3, Cultural Resources Personnel:</b> Prior to the start of ground disturbance (includes "preconstruction site mobilization," "construction-related ground disturbance," and "construction-related grading, boring, and trenching," as defined in the General Conditions for this project), the project owner shall obtain the services of a Cultural Resources Specialist (CRS) and one or more alternate CRSs, if alternates are needed. The CRS shall manage all monitoring, mitigation, curation, and reporting activities in accordance with the Conditions of Certification (Conditions).</p> <p>The CRS shall have a primarily administrative and coordination role for the PSPP. The CRS may obtain the services of Cultural Resources Monitors (CRMs), if needed, to assist in monitoring, mitigation, and curation activities. The project owner shall ensure that the CRS implements the <b>Cultural Resources</b> Conditions providing for data recovery from known historical resources and ensure that the CRS makes recommendations regarding the eligibility for listing in the California Register of Historical Resources (CRHR) of any cultural resources that are newly discovered or that may be affected in an unanticipated manner. No ground disturbance shall occur prior to Compliance Project Manager (CPM) approval of the CRS and alternates, unless such activities are specifically approved by the CPM. Approval of a CRS may be denied or revoked for reasons including but not limited to noncompliance on this or other Energy Commission projects.</p> <p><b>Cultural Resources Specialist:</b> The resumé for the CRS and alternate(s) shall include information demonstrating to the satisfaction of the CPM that their training and backgrounds conform to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61. In addition, the CRS shall have the following qualifications:</p> <ol style="list-style-type: none"> <li>1. A background in anthropology and prehistoric archaeology;</li> <li>2. At least 10 years of archaeological resource mitigation and field experience, with at least three of those years in California; and</li> <li>3. At least three years of experience in a decision-making capacity on cultural resources projects, with at least one of those years in California, and the appropriate training and experience to knowledgeably make recommendations regarding the significance of cultural resources.</li> </ol>	<p><b>Verification:</b></p> <ol style="list-style-type: none"> <li>1. Preferably at least 120 days, but in any event no less than 75 days prior to the start of ground disturbance, the project owner shall submit the resúmes for the CRS, the alternate CRS(s) if desired, the PPA, and the PHA to the CPM for review and approval.</li> <li>2. At least 65 days prior to the start of data recovery on known archaeological sites, the project owner shall confirm in writing to the CPM that the approved CRS, the PPA, and the PHA will be available for on-site work and are prepared to implement the <b>Cultural Resources</b> Conditions <b>CUL-11</b> through <b>CUL-15</b>.</li> <li>3. At least 10 days prior to a termination or release of the CRS, or within 10 days after the resignation of a CRS, the project owner shall submit the resumé of the proposed new CRS to the CPM for review and approval. At the same time, the project owner shall also provide to the proposed new CRS the AFC and all cultural resources documents, field notes, photographs, and other cultural resources materials generated by the project. If no alternate CRS is available to assume the duties of the CRS, a monitor may serve in place of a CRS so that ground disturbance may continue up to a maximum of three days without a CRS. If cultural resources are discovered then ground disturbance will</li> </ol>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>CULTURAL RESOURCES (cont.)</b>		
<p><b>Required Cultural Resources Technical Specialists:</b> The project owner shall ensure that the CRS obtains the services of a qualified prehistoric archaeologist to conduct the research specified in <b>CUL-11</b> and <b>CUL-12</b>. The Project Prehistoric Archaeologist's (PPA) training and background must meet the U.S. Secretary of the Interior's Professional Qualifications Standards for prehistoric archaeology, as published in Title 36, Code of Federal Regulations, part 61, and the résumé of the PPA must demonstrate familiarity with similar artifacts and environmental modifications (deliberate and incidental) to those associated with the prehistoric and protohistoric use of the Chuckwalla Valley. The PPA must meet OSHA standards as a "Competent Person" in trench safety. The project owner shall ensure that the CRS obtains the services of a qualified historical archaeologist to conduct the research specified in <b>CUL-13</b> and <b>CUL-14</b>. The Project Historical Archaeologist's (PHA) training and background must meet the U.S. Secretary of Interior's Professional Qualifications Standards for historical archaeology, as published in Title 36, Code of Federal Regulations, part 61. The résumés of the CRS, alternate CRS, the PPA, and the PHA shall include the names and telephone numbers of contacts familiar with the work of these persons on projects referenced in the résumés and demonstrate to the satisfaction of the CPM that these persons have the appropriate training and experience to undertake the required research. The project owner may name and hire the CRS, alternate CRS, the PPA, and the PHA prior to certification.</p> <p><b>Field Crew Members and Cultural Resources Monitors:</b> CRMs and field crew members shall have the following qualifications:</p> <ol style="list-style-type: none"> <li>1. A B.S. or B.A. degree in anthropology, archaeology, historical archaeology, or a related field, and one year experience monitoring in California; or</li> <li>2. An A.S. or A.A. degree in anthropology, archaeology, historical archaeology, or a related field, and four years experience monitoring in California; or</li> <li>3. Enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historical archaeology, or a related field, and two years of monitoring experience in California.</li> </ol>	<p>remain halted until there is a CRS or alternate CRS to make a recommendation regarding significance.</p> <ol style="list-style-type: none"> <li>4. At least 20 days prior to data recovery on known archaeological sites, the CRS shall provide a letter naming anticipated field crew members for the project and attesting that the identified field crew members meet the minimum qualifications for cultural resources data recovery required by this Condition.</li> <li>5. At least 20 days prior to ground disturbance, the CRS shall provide a letter naming anticipated CRMs for the project and attesting that the identified CRMs meet the minimum qualifications for cultural resources monitoring required by this Condition.</li> <li>6. At least five days prior to additional CRMs beginning on-site duties during the project, the CRS shall provide letters to the CPM identifying the new CRMs and attesting to their qualifications.</li> </ol>	
<p><b>CUL-4, Project Documentation for Cultural Resources Personnel:</b> Prior to the start of ground disturbance, the project owner shall provide the CRS, the PPA, and the PHA with copies of the AFC, data responses, confidential cultural resources documents, the Revised Staff Assessment (RSA), RSA Errata, and the Commission Decision for the project. The project owner shall also provide the CRS, the PPA, the PHA, and the CPM with maps and drawings showing the footprints of the power plant, all linear facility routes, all access roads, and all laydown areas. Maps shall include the appropriate USGS quadrangles and maps at an appropriate scale (e.g., 1:2400 or 1" = 200') for plotting cultural features or materials. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM. The CPM shall review map submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities. No ground disturbance shall occur prior to CPM approval of maps and drawings, unless such activities are specifically approved by the CPM. If construction of the project would proceed in phases, maps and drawings not previously provided shall be provided to the CRS, the PPA, the PHA, and CPM prior to the start of each phase. Written notice identifying the proposed schedule of each project phase shall be provided to the CRS and CPM. Weekly, until ground disturbance is completed, the project construction manager shall provide to the CRS and CPM a schedule of project activities for the following week, including the identification of area(s) where ground disturbance will occur during that week. The project owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases.</p>	<ol style="list-style-type: none"> <li>1. Preferably at least 115 days, but in any event no less than 60 days prior to the start of ground disturbance, the project owner shall provide the AFC, data responses, confidential cultural resources documents, the Revised Staff Assessment (RSA), RSA Errata, and the Commission Decision for the project to the CRS, if needed, and to the PPA, and the PHA. The project owner shall also provide the subject maps and drawings to the CRS, PPA, PHA, and CPM. Staff, in consultation with the CRS, PPA, and PHA, will review and approve maps and drawings suitable for cultural resources monitoring and data recovery activities.</li> <li>2. At least 15 days prior to the start of ground disturbance, if there are changes to any project-related footprint, the</li> </ol>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>CULTURAL RESOURCES (cont.)</b>		
	<p>project owner shall provide revised maps and drawings for the changes to the CRS, PPA, PHA, and CPM.</p> <ol style="list-style-type: none"> <li>At least 15 days prior to the start of each phase of a phased project, the project owner shall submit the appropriate maps and drawings, if not previously provided, to the CRS, PPA, PHA, and CPM.</li> <li>Weekly, during ground disturbance, a current schedule of anticipated project activity shall be provided to the CRS and CPM by letter, e-mail, or fax.</li> <li>Within five days of changing the scheduling of phases of a phased project, the project owner shall provide written notice of the changes to the CRS and CPM.</li> </ol>	
<p><b>CUL-5, Cultural Resources Monitoring and Mitigation Plan:</b> Prior to the start of ground disturbance, the project owner shall submit to the CPM for review and approval the Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by or under the direction of the CRS, with the contributions of the PPA, and the PHA. The authors' name(s) shall appear on the title page of the CRMMP. The CRMMP shall specify the impact mitigation protocols for all known cultural resources and identify general and specific measures to minimize potential impacts to all other cultural resources, including those discovered during construction. Implementation of the CRMMP shall be the responsibility of the CRS and the project owner. Copies of the CRMMP shall reside with the CRS, alternate CRS, the PPA, and the PHA, each CRM, and the project owner's on-site construction manager. No ground disturbance shall occur prior to CPM approval of the CRMMP, unless such activities are specifically approved by the CPM. Prior to certification, the project owner may have the CRS, alternate CRS, the PPA, and the PHA complete and submit to CEC for review the CRMMP, except for the portions to be contributed by the PTNCL and the DTCCL programs. The CRMMP shall include, but not be limited to, the elements and measures listed below.</p> <ol style="list-style-type: none"> <li>The following statement shall be included in the Introduction: "Any discussion, summary, or paraphrasing of the Conditions of Certification in this CRMMP is intended as general guidance and as an aid to the user in understanding the Conditions and their implementation. The Conditions, as written in the Commission Decision, shall supersede any summarization, description, or interpretation of the conditions in the CRMMP. The <b>Cultural Resources</b> Conditions of Certification from the Commission Decision are contained in <b>Appendix A.</b>"</li> <li>The duties of the CRS shall be fully discussed, including coordination duties with respect to the completion of the Prehistoric Trails Network Cultural Landscape (PTNCL) documentation and possible NRHP nomination program and the Desert Training Center California-Arizona Maneuver Area Cultural Landscape (DTCCL) documentation and possible NRHP nomination program, and oversight/management duties with respect to site evaluation, data collection, monitoring, and reporting at both known prehistoric and historic-period archaeological sites and any CRHR-eligible (as determined by the CPM) prehistoric and historic-period archaeological sites discovered during construction.</li> </ol>	<ol style="list-style-type: none"> <li>Preferably at least 45 days, but in any event no less than 30 days prior to the start of ground disturbance, the project owner shall submit the CRMMP to the CPM for review and approval.</li> <li>At least 20 days prior to the start of ground disturbance, in a letter to the CPM, the project owner shall agree to pay curation fees for any materials generated or collected as a result of the archaeological investigations (survey, testing, data recovery).</li> <li>At least 30 days prior to the start of ground disturbance, the project owner shall provide to the CPM a copy of a letter from a curation facility that meets the standards stated in the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections, stating the facility's willingness and ability to receive the materials generated by PSPP cultural resources activities and requiring curation. Any agreements concerning curation will be retained and available for audit for the life of the project.</li> </ol>	CEC

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>CULTURAL RESOURCES (cont.)</b>		
<p>3. A general research design shall be developed that:</p> <ul style="list-style-type: none"> <li>a. Charts a timeline of all research activities, including those coordinated under the PTNCL and DTCCL documentation and possible NRHP nomination programs;</li> <li>b. Recapitulates the existing paleoenvironmental, prehistoric, ethnohistoric, ethnographic, and historic contexts developed in the PTNCL and DTCCL historic context and adds to these the additional context of the non-military, historic-period occupation and use of the Chuckwalla Valley, to create a comprehensive historic context for the PSPP vicinity;</li> <li>c. Poses archaeological research questions and testable hypotheses specifically applicable to the archaeological resource types known for the Chuckwalla Valley, based on the research questions developed under the PTNCL and DTCCL research and on the archaeological and historical literature pertinent to the Chuckwalla Valley; and</li> <li>d. Clearly articulates why it is in the public interest to address the research questions that it poses.</li> </ul> <p>4. Protocols, reflecting the guidance provided in CUL-10 through CUL-15 shall be specified for the treatment of known and newly discovered prehistoric and historic-period archaeological resource types.</p> <p>5. Artifact collection, retention/disposal, and curation policies shall be discussed, as related to the research questions formulated in the research design. These policies shall apply to cultural resources materials and documentation resulting from evaluation and data recovery at both known prehistoric and historic-period archaeological sites and any CRHR-eligible (as determined by the CPM) prehistoric and historic-period archaeological sites discovered during construction. A prescriptive treatment plan may be included in the CRMMP for limited data types.</p> <p>6. The implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the ground disturbance and post-ground-disturbance analysis phases of the project shall be specified.</p> <p>7. Person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team shall be identified.</p> <p>8. The manner in which Native American observers or monitors will be included, in addition to their roles in the activities required under CUL-1, the procedures to be used to select them, and their roles and responsibilities shall be described.</p> <p>9. All impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during ground disturbance, construction, and/or operation shall be described. Any areas where these measures are to be implemented shall be identified. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from project-related impacts.</p> <p>10. The commitment to record on Department of Parks and Recreation (DPR) 523 forms, to map, and to photograph all encountered cultural resources over 50 years of age shall be stated. In addition, the commitment to curate all archaeological materials retained as a result of the archaeological investigations (survey, testing, data recovery), in accordance with the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections, into a retrievable storage collection in a public repository or museum shall be stated.</p>		

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>CULTURAL RESOURCES (cont.)</b>		
<p>11. The commitment of the project owner to pay all curation fees for artifacts recovered and for related documentation produced during cultural resources investigations conducted for the project shall be stated. The project owner shall identify a curation facility that could accept cultural resources materials resulting from PSPP cultural resources investigations.</p> <p>12. The CRS shall attest to having access to equipment and supplies necessary for site mapping, photography, and recovery of all cultural resource materials (that cannot be treated prescriptively) from known CRHR-eligible archaeological sites and from CRHR eligible sites that are encountered during ground disturbance.</p> <p>13. The contents, format, and review and approval process of the final Cultural Resource Report (CRR) shall be described.</p>		
<p><b>CUL-6, Cultural Resources Report (CRR):</b> The project owner shall submit the final Cultural Resources Report (CRR) to the CPM for review and approval and to the BLM Palm Springs archaeologist for review and comment. The final CRR shall be written by or under the direction of the CRS. The final CRR shall report on all field activities including dates, times and locations, results, samplings, and analyses. All survey reports, revised and final Department of Parks and Recreation (DPR) 523 forms, data recovery reports, and any additional research reports not previously submitted to the California Historical Resource Information System (CHRIS) and the State Historic Preservation Officer (SHPO) shall be included as appendices to the final CRR. If the project owner requests a suspension of ground disturbance and/or construction activities, then a draft CRR that covers all cultural resources activities associated with the project shall be prepared by the CRS and submitted to the CPM and to the BLM Palm Springs archaeologist for review and approval on the same day as the suspension/extension request. The draft CRR shall be retained at the project site in a secure facility until ground disturbance and/or construction resumes or the project is withdrawn. If the project is withdrawn, then a final CRR shall be submitted to the CPM for review and approval at the same time as the withdrawal request.</p>	<ol style="list-style-type: none"> <li>1. Within 30 days after requesting a suspension of construction activities, the project owner shall submit a draft CRR to the CPM for review and approval.</li> <li>2. Within 180 days after completion of ground disturbance (including landscaping), the project owner shall submit the final CRR to the CPM for review and approval and to the BLM Palm Springs archaeologist for review and comment. If any reports have previously been sent to the CHRIS, then receipt letters from the CHRIS or other verification of receipt shall be included in an appendix.</li> <li>3. Within 10 days after the CPM and the BLM Palm Springs archaeologist approve the CRR, the project owner shall provide documentation to the CPM confirming that copies of the final CRR have been provided to the SHPO, the CHRIS, the curating institution, if archaeological materials were collected, and to the Tribal Chairpersons of any Native American groups requesting copies of project-related reports.</li> </ol>	CEC
<p><b>CUL-7, Worker Environmental Awareness Program (WEAP):</b> Prior to and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment at the project site, along the linear facilities routes, and at laydown areas, roads, and other ancillary areas. The training shall be prepared by the CRS, may be conducted by any member of the archaeological team, and may be presented in the form of a video. The CRS shall be available (by telephone or in person) to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must be resumed when ground disturbance, such as landscaping, resumes.</p> <p>The training shall include:</p>	<ol style="list-style-type: none"> <li>1. At least 30 days prior to the start of ground disturbance, the CRS shall provide the training program draft text and graphics and the informational brochure to the CPM for review and approval.</li> <li>2. At least 15 days prior to the start of ground disturbance, the CPM will provide to the project owner a WEAP Training Acknowledgement form for each WEAP trained worker to sign.</li> </ol>	CEC

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>CULTURAL RESOURCES (cont.)</b>		
<ol style="list-style-type: none"> <li>1. A discussion of applicable laws and penalties under the law;</li> <li>2. Samples or visuals of artifacts that might be found in the project vicinity;</li> <li>3. A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;</li> <li>4. A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during construction, and the range of variation in the appearance of such deposits;</li> <li>5. Instruction that the CRS, alternate CRS, and CRMs have the authority to halt ground disturbance in the area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the CRS;</li> <li>6. Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources discovery and shall contact their supervisor and the CRS or CRM, and that redirection of work would be determined by the construction supervisor and the CRS;</li> <li>7. An informational brochure that identifies reporting procedures in the event of a discovery;</li> <li>8. An acknowledgement form signed by each worker indicating that they have received the training; and</li> <li>9. A sticker that shall be placed on hard hats indicating that environmental training has been completed.</li> <li>10. No ground disturbance shall occur prior to implementation of the WEAP program, unless such activities are specifically approved by the CPM.</li> </ol>	<ol style="list-style-type: none"> <li>3. Monthly, until ground disturbance is completed, the project owner shall provide in the Monthly Compliance Report (MCR) the WEAP Training Acknowledgement forms of workers who have completed the training in the prior month and a running total of all persons who have completed training to date.</li> </ol>	
<p><b>CUL-8, Construction Monitoring Program:</b> The project owner shall ensure that the CRS, alternate CRS, or CRMs, to prevent construction impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner, monitor full time all ground disturbance. Full-time archaeological monitoring for this project shall be the archaeological monitoring of the earth-removing activities in the areas specified in the previous paragraph, for as long as the activities are ongoing. Where excavation equipment is actively removing dirt and hauling the excavated material farther than 50 feet from the location of active excavation, full-time archaeological monitoring shall require at least two monitors per excavation area. In this circumstance, one monitor shall observe the location of active excavation and a second monitor shall inspect the dumped material. For excavation areas where the excavated material is dumped no farther than 50 feet from the location of active excavation, one monitor shall both observe the location of active excavation and inspect the dumped material. A Native American monitor shall be obtained to monitor ground disturbance in areas where Native American artifacts may be discovered. Contact lists of interested Native Americans and guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM. The CPM will either identify potential monitors or will allow ground disturbance to proceed without a Native American monitor. The research design in the CRMMP shall govern the collection, treatment, retention/disposal, and curation of any archaeological materials encountered.</p>	<ol style="list-style-type: none"> <li>1. At least 30 days prior to the start of ground disturbance, the CPM will provide to the CRS an electronic copy of a form to be used as a daily monitoring log.</li> <li>2. Monthly, while monitoring is on-going, the project owner shall include in each MCR a copy of the monthly summary report of cultural resources-related monitoring prepared by the CRS and shall attach any new DPR 523A forms completed for finds treated prescriptively, as specified in the CRMMP.</li> <li>3. At least 24 hours prior to implementing a proposed change in monitoring level, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for changing the monitoring level.</li> </ol>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>CULTURAL RESOURCES (cont.)</b>		
<p>On forms provided by the CPM, CRMs shall keep a daily log of any monitoring and other cultural resources activities and any instances of noncompliance with the Conditions and/or applicable LORS. Copies of the daily monitoring logs shall be provided by the CRS to the CPM, if requested by the CPM. From these logs, the CRS shall compile a monthly monitoring summary report to be included in the MCR. If there are no monitoring activities, the summary report shall specify why monitoring has been suspended. The CRS or alternate CRS shall report daily to the CPM on the status of the project's cultural resources-related activities, unless reducing or ending daily reporting is requested by the CRS and approved by the CPM.</p> <p>In the event that the CRS believes that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring. The CRS, at his or her discretion, or at the request of the CPM, may informally discuss cultural resources monitoring and mitigation activities with Energy Commission technical staff. Cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS, or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered non-compliance with these Conditions. Upon becoming aware of any incidents of non-compliance with the Conditions and/or applicable LORS, the CRS and/or the project owner shall notify the CPM by telephone or e-mail within 24 hours. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the Conditions. When the issue is resolved, the CRS shall write a report describing the issue, the resolution of the issue, and the effectiveness of the resolution measures. This report shall be provided in the next MCR for the review of the CPM.</p>	<p>4. Daily, as long as no cultural resources are found, the CRS shall provide a statement that "no cultural resources over 50 years of age were discovered" to the CPM as an e-mail or in some other form of communication acceptable to the CPM.</p> <p>5. At least 24 hours prior to reducing or ending daily reporting, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for reducing or ending daily reporting.</p> <p>6. No later than 30 days following the discovery of any Native American cultural materials, the project owner shall submit to the CPM copies of the information transmittal letters sent to the Chairpersons of the Native American tribes or groups who requested the information. Additionally, the project owner shall submit to the CPM copies of letters of transmittal for all subsequent responses to Native American requests for notification, consultation, and reports and records.</p> <p>7. Within 15 days of receiving them, the project owner shall submit to the CPM copies of any comments or information provided by Native Americans in response to the project owner's transmittals of information.</p>	
<p><b>CUL-9, Authority to Halt Construction; Treatment of Discoveries:</b> The project owner shall grant authority to halt ground disturbance to the CRS, alternate CRS, PPA, PHA, and the CRMs in the event of a discovery. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS.</p> <p>In the event that a cultural resource over 50 years of age is found (or if younger, determined exceptionally significant by the CPM), or impacts to such a resource can be anticipated, ground disturbance shall be halted or redirected in the immediate vicinity of the discovery sufficient to ensure that the resource is protected from further impacts. Monitoring and daily reporting, as provided in other Conditions, shall continue during the project's ground-disturbing activities elsewhere. The halting or redirection of ground disturbance shall remain in effect until the CRS has visited the discovery, and all of the following have occurred:</p> <p>1. The CRS has notified the project owner, and the CPM has been notified within 24 hours of the discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning, including a description of the discovery (or changes in character or attributes), the action taken (i.e., work stoppage or redirection), a recommendation of CRHR eligibility, and recommendations for data recovery from any cultural resources discoveries, whether or not a determination of CRHR eligibility has been made.</p>	<p>1. At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM and CRS with a letter confirming that the CRS, alternate CRS, PPA, PHA, and CRMs have the authority to halt ground disturbance in the vicinity of a cultural resources discovery, and that the project owner shall ensure that the CRS notifies the CPM within 24 hours of a discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning.</p> <p>2. Within 48 hours of the discovery of a resource of interest to Native Americans, the project owner shall ensure that the CRS notifies all Native American groups that expressed a desire to be notified in the event of such a discovery.</p>	CEC



## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>CULTURAL RESOURCES (cont.)</b>		
<p>2. If the discovery would be of interest to Native Americans, the CRS has notified all Native American groups that expressed a desire to be notified in the event of such a discovery.</p> <p>3. The CRS has completed field notes, measurements, and photography for a DPR 523 "Primary" form. Unless the find can be treated prescriptively, as specified in the CRMMP, the "Description" entry of the DPR 523 "Primary" form shall include a recommendation on the CRHR eligibility of the discovery. The project owner shall submit completed forms to the CPM.</p> <p>4. The CRS, the project owner, and the CPM have conferred, and the CPM has concurred with the recommended eligibility of the discovery and approved the CRS's proposed data recovery plan, if any, including the curation of the artifacts, or other appropriate mitigation; and any necessary data recovery and mitigation have been completed.</p>	<p>3. Unless the discovery can be treated prescriptively, as specified in the CRMMP, completed DPR 523 forms for resources newly discovered during ground disturbance shall be submitted to the CPM for review and approval no later than 24 hours following the notification of the CPM, or 48 hours following the completion of data recordation/recovery, whichever the CRS decides is more appropriate for the subject cultural resource.</p>	
<p><b>CUL-10, Flag and Avoid:</b> If resources within the transmission line corridor can be spanned rather than impacted, or in the event that new resources are discovered during construction where impacts can be reduced or avoided, the project owner shall:</p> <p>1. Ensure that a CRS, alternate CRS, PPA, or CRM re-establish the boundary of each site, add a 10-meter-wide buffer around the periphery of each site boundary, and flag the resulting space in a conspicuous manner;</p> <p>2. Ensure that a CRM enforces avoidance of the flagged areas during PSPP construction; and</p> <p>3. Ensure, after completion of construction, boundary markings around each site and buffer are removed so as not to attract vandals.</p>	<p>Within 90 days of the completion of Project construction, the project owner shall submit for CPM review and approval a letter, with photograph and maps, evidencing the removal of boundary markings.</p>	CEC
<p><b>CUL-11, Data Recovery for Simple Prehistoric Sites:</b> (Sparse Lithic Scatters, Cairns, and Pot Drops) The project owner shall ensure the CRMMP includes a data recovery plan for the resource type "simple prehistoric sites," consisting of sites SMP-P-1015, SMP-P-1016, SMP-P-2014, SMP-P-2015, and SMP-P- 001. This site list may be revised only with the agreement of the CRS and the CPM. The data recovery plan shall include the use of the CARIDAP protocol on sites that qualify, how to proceed if features or other buried deposits are encountered, and the materials analyses] and laboratory artifact analyses that will be used. The plan shall also specify in detail the location recordation equipment and methods used and describe any post-processing of the data. If allowed by the BLM, prior to the start of ground disturbance within 30 meters of the site boundaries of each of these sites, the project owner</p> <p>shall ensure that the CRS, the PPA, and/or archaeological team members implement the plan, which, for sites where CARIDAP does not apply, shall include, but is not limited to the following tasks:</p> <p>1. Use location recordation equipment that has the latest technology with sub-meter accuracy (such as UTM 11 North or California Teale Albers) to add to the original site maps the following features: seasonal drainages, site boundaries, location of each individual artifact, and the boundaries around individual artifact concentrations;</p> <p>2. Request the PTNCL PG, or equivalent qualified person approved by the CPM and hired by the project owner should the PTNCL geoarchaeologist not be available, to identify the specific landform for each site and its relationship to specific ancient lakeshores of Palen Dry Lake; if a lakeshore is present within 100 meters of the site boundary, include it on the site map;</p>	<p>1. At least 45 days prior to ground disturbance, the project owner shall notify the CPM that data recovery for small sites has ensued.</p> <p>2. After the completion of the excavation of the first 1-meter-by-1-meter excavation unit at each of the subject sites, the CRS shall notify the CPM regarding the presence or absence of subsurface deposits and shall make a recommendation on the site's CRHR eligibility.</p> <p>3. Within one week of the completion of data recovery at a site, the project owner shall submit a letter report written by the PPA or CRS for review and approval of the CPM. When the CPM approves the letter report, ground disturbance may begin at this site location.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>CULTURAL RESOURCES (cont.)</b>		
<ol style="list-style-type: none"> <li>3. Map and field-record all lithic artifacts (numbers of flakes, the reduction sequence stage each represents, cores, tool blanks, finished tools, hammerstones, and concentrations, and the material types of each) and the other types of prehistoric artifacts present.</li> <li>4. Map any differential distribution of artifacts and suggest explanations for the distribution</li> <li>5. Assess the integrity of the site and provide the evidence substantiating that assessment;</li> <li>6. Collect for dating and source analyses any obsidian artifacts;</li> <li>7. Field record the surface location of all other artifacts and collect all ceramic artifacts and botanical and faunal remains for laboratory analysis and curation;</li> <li>8. Surface scrape to a depth of 5 centimeters a 5-meter-by-5-meter area centered on the artifact concentration, field-record the lithic artifacts as to location, material type, and the reduction sequence stage each represents, record the location of all other artifacts, and retain the obsidian and ceramic artifacts and botanical and faunal remains for laboratory analysis and curation;</li> <li>9. Excavate one 1-meter-by-1-meter unit in 10-centimeter levels until the unit reaches a depth of 20 centimeters below any anthropogenic materials, placing the unit in the part of the site with the highest artifact density and recording its locations on the site map;</li> <li>10. Place one 1-meter-by-1-meter excavation unit, as described above, in the center of each concentration if multiple artifact concentrations have been identified;</li> <li>11. Notify the CPM by telephone or e-mail that subsurface deposits were or were not encountered and make a recommendation on the site's CRHR eligibility;</li> <li>12. If no subsurface deposits were encountered, and the CPM agrees the site is not eligible for the CRHR, data recovery is complete;</li> <li>13. If subsurface deposits are encountered, test the horizontal limits of the site by excavating additional 1-meter-by-1-meter excavation units in 10-centimeter levels until the unit reaches a depth of 20 centimeters below any anthropogenic materials, using a shovel or hand auger, or other similar technique, at four spots equally spread around the exterior edge of each site, recording the locations of these units on the site map;</li> <li>14. Sample the encountered features or deposits, using the methods described in the CRMMP, record their locations on the site map, retain samples, such as flotation, pollen, and charcoal, for analysis, and retain all artifacts for professionally appropriate laboratory analyses and curation, until data recovery is complete;</li> <li>15. Present the results of the <b>CUL-11</b> data recovery in a letter report by the PPA or CRS, which shall serve as a preliminary report. Letter reports may address one site, or multiple sites depending on the needs of the CRS. The letter report shall be a concise document that provides description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, a discussion of the potential range of error for that tally, a map showing the location of excavation units including topographic contours and the site landforms, and a discussion of the CRHR eligibility of each site and the justification for that determination;</li> </ol>		

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>CULTURAL RESOURCES (cont.)</b>		
<p>16. Update the existing Department of Parks and Recreation (DPR) 523 site form for these sites, including new data on seasonal drainages, site boundaries, location of each individual artifact, the boundaries around individual artifact concentrations, the landform, and the eligibility determination;</p> <p>17. Provide the recovered data to the PTNCL PI-Prehistoric Archaeologist; and</p> <p>18. Present the final results of data recovery at these prehistoric sites in the CRR, as described in <b>CUL-6</b>.</p>		
<p><b>CUL-12, Data Recovery for Complex Prehistoric Sites:</b> The project owner shall ensure the CRMMP includes a data recovery plan for the resource type “complex prehistoric sites,” consisting of SMP-P-1017, SMP-P-1018, SMP-P-2018, and SMP-P-2023. This site list may be revised only with the agreement of the CRS and the CPM. The data recovery plan shall include how to proceed if buried deposits are encountered and shall also include the materials analyses and laboratory artifact analyses that will be used. The plan shall also specify in detail the location recordation equipment and methods used and describe any post-processing of the data. If allowed by the BLM, prior to the start of ground disturbance within 30 meters of the site boundaries of each of these sites, the project owner shall then ensure that the CRS, the PPA, and/or archaeological team members implement the plan, which shall include, but is not limited to, the following tasks:</p> <ol style="list-style-type: none"> <li>1. Use location recordation equipment that has the latest technology with sub-meter accuracy (such as UTM 11 North or California Teale Albers) to add to the original site maps the following features: seasonal drainages, site boundaries, location of each individual artifact, and the boundaries around individual artifact concentrations;</li> <li>2. Request the PTNCL PG, or equivalent qualified person approved by the CPM and hired by the project owner should the PG not be available, to identify the specific landform for each site and its relationship to specific ancient lakeshores of Palen Dry Lake. If a lakeshore is present within 100 meters of the site boundary, include it on the site map;</li> <li>3. Map any differential distribution of artifacts and suggest an explanation for this distribution;</li> <li>4. Assess the integrity of the site and state the evidence substantiating that opinion;</li> <li>5. Collect all artifacts after their locations are marked and submit them for laboratory analysis;</li> <li>6. Excavate one 1-meter-by-1-meter unit in 10-centimeter levels until three sterile levels are encountered, or until the unit reaches maximum depth of planned impact, placing this unit in the part of the site with the highest artifact density; or, if multiple artifact concentrations were identified, place one 1-meter-by-1-meter excavation unit in the center of each concentration and excavate as just described; retain any artifacts for laboratory analysis;</li> <li>7. Determine the vertical and horizontal limits of the each site by placing test units at four locations equally spread around the surface exterior edge and excavating or probing down to the Holocene basement, using a shovel, hand auger, or similar technique; continue exploration in all directions until the horizontal limits of the site are reached; retain any artifacts for laboratory analysis;</li> <li>8. Excavate the surface feature or features, using the methods described in the CRMMP; record their locations on the site map, retain samples, such as flotation, pollen, and charcoal, for analysis, and retain all artifacts for professionally appropriate laboratory analyses and curation, until data recovery is complete;</li> </ol>	<ol style="list-style-type: none"> <li>1. At least 45 days prior to ground disturbance, the project owner shall notify the CPM that data recovery for large complex sites has ensued.</li> <li>2. Within one week of the completion of data recovery at a site, the project owner shall verify this by submitting a letter report written by the PPA or CRS for review and approval of the CPM. When the CPM approves the letter report, ground disturbance may begin at these site locations.</li> </ol>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>CULTURAL RESOURCES (cont.)</b>		
<p>9. Notify the CPM by telephone or e-mail that subsurface deposits were or were not encountered and make a recommendation on the site's CRHR eligibility;</p> <p>10. If no subsurface deposits were encountered, and the CPM agrees the site is not eligible for the CRHR, data recovery is complete;</p> <p>11. If subsurface deposits were found, develop a sampling design for additional data recovery in consultation with the CRS; plans for this contingency shall be described in detail in the CRMMP;</p> <p>12. Present the results of the <b>CUL-12</b> data recovery in a letter report by the PPA or CRS that shall serve as a preliminary report. Letter reports may address one site, or multiple sites depending on the needs of the CRS. The letter report shall be a concise document that provides description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, a discussion of the potential range of error for that tally, and a map showing the location of excavation units including topographic contours and the site landforms;</p> <p>13. Update the existing Department of Parks and Recreation (DPR) 523 site form for these sites, including new data on seasonal drainages, site boundaries, location of each individual artifact, the boundaries around individual artifact concentrations, and the landform;</p> <p>14. Provide the recovered data to the PTNCL PI-Prehistoric Archaeologist; and</p> <p>15. Present the final results of data recovery for the complex prehistoric sites in the CRR, as described in <b>CUL-6</b>.</p>		
<p><b>CUL-13, Data Recovery for Historic-Period Refuse Scatters:</b> Prior to the start of ground disturbance, the project owner shall ensure that a recovery plan is included in the CRMMP for upgrading the recordation of historic-period refuse scatter sites located on the proposed plant site. For Reconfigured Alternative # 3, these consist of sites SMP-H-1003, SMP-H-1004, SMP-H-1006, SMP-H-1008, SMP-H-1009, SMP-H-1010, SMP-H-1011, SMP-H-1012, SMP-H- 1013, SMP-H-1020, SMP-H-1021, SMP-H 1022, SMP-H-1023, SMPH- 2002, SMP-H-2003, SMP-H-2004, SMP-H-2006, SMP-H-2007, SMP-H-2008, SMP-H-2010, SMP-H-2011/12, SMP-H-2017, SMP-H- 2019, SMP-H-2021; JR-101, JR-102, JR-104, JR-109, JR-110; TC- 008, TC-009, TC-020, and TC-032. For Reconfigured Alternative #2, the sites requiring upgraded recordation consist of the same sites as Reconfigured Alternative #3 plus site JR-107. These site lists may be revised only with the agreement of the CRS and the CPM. The focus of the recordation upgrade is to determine if these sites can be attributed to the DTC/C-AMA use of the region and are therefore contributors to the DTCCL. The plan shall specify in detail the location recordation equipment and methods to be used and describe any anticipated post-processing of the data. The project owner shall then ensure that the CRS, the PHA, and/or archaeological team members implement the plan, if allowed by the BLM, which shall include, but is not limited to the following tasks:</p> <p>1. The project owner shall hire a PHA with the qualifications described in CUL-3 to supervise the field work.</p> <p>2. The project owner shall ensure that, prior to beginning the field work, the PHA and crew chief are trained by the DTCCL Historical Archaeologist, or equivalent qualified person approved by the CPM and hired by the project owner should the DTCCL Historical Archaeologist not be available, to identify the specific landform for each site; in the identification, analysis and interpretation of the artifacts, environmental modifications, and trash disposal patterns associated with the</p>	<p>1. At least 45 days prior to ground disturbance, the project owner shall notify the CPM that mapping and upgraded in-field artifact analysis has ensued on the historic-period refuse scatter sites.</p> <p>2. Within one week of completing data recovery at a site, the project owner shall submit to the CPM for review and approval a letter report written by the CRS, evidencing that the field portion of data recovery at each site has been completed. When the CPM approves the letter report, ground disturbance may begin at the site location(s) that are the subject of the letter report.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>CULTURAL RESOURCES (cont.)</b>		
<p>early phases of WWII land-based U.S. army activities, as researched and detailed by the DTCCL PI-Historian and the DTCCL Historical Archaeologist.</p> <p>3. The project owner shall ensure that, prior to beginning the field work, the field crew members are also trained in the consistent and accurate identification of the full range of late nineteenth and early- to mid-twentieth-century can, bottle, and ceramic diagnostic traits.</p> <p>4. The project owner shall ensure that the original site map shall be updated to include at minimum: landform features such as small drainages, any man-made features, the limits of any artifact concentrations and features, using location recordation equipment that has the latest technology with sub-meter accuracy (such as UTM 11 North or California Teale Albers).</p> <p>5. The project owner shall ensure that a detailed in-field analysis of all artifacts shall be completed, documenting the measurements and the types of seams and closures for each bottle, and the measurements, seams, closure, and opening method for all cans. Photographs shall be taken of maker's marks on bottles, any text or designs on bottles and cans, and of decorative patterns and maker's marks on ceramics. Artifacts shall not be collected.</p> <p>6. The project owner shall ensure that the details of what is found at each site shall be presented in a letter report from the CRS or PHA, which shall serve as a preliminary report, that details what was found at each site, as follows:</p> <p>a. Letter reports may address one site, or multiple sites depending on the needs of the CRS; and</p> <p>b. The letter report shall be a concise document that provides a description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, a discussion of the potential range of error for that tally, and a map showing the location of collection and/or excavation units, including topographic contours and the site landforms.</p> <p>c. The letter report shall make a recommendation on whether each site is a contributor to the DTTCL.</p> <p>7. The project owner shall ensure that the data collected from the field work shall be provided to the DTCCL Historical Archaeologist to assist in the determination of which, if any, of the historic-period sites are contributing elements to the DTCCL.</p> <p>8. The project owner shall ensure that the PHA analyzes all recovered data and writes, or supervisors the writing of a comprehensive final report. This report shall be included in the CRR (CUL-6). Relevant portions of the information gathered shall be included in the possible NRHP nomination for the DTCCL (funded by CUL-2).</p>		
<p><b>CUL-14, Data Recovery for Historic-Period Sites with Features:</b> Prior to the start of ground disturbance, the project owner shall ensure that a data recovery plan is included in the CRMMP for evaluation and data recovery from historic-period archaeological sites with features. For Reconfigured Alternative #3, these sites consist of sites SMP-H- 1005, SMP-H-1007, SMP-H-2016. For Reconfigured Alternative #2, these sites consist of the same sites as Reconfigured Alternative #3, plus site JR-108. These site lists may be revised only with the agreement of the CRS and the CPM. The plan shall specify in detail the location recordation equipment and methods to be used and describe any anticipated post-processing of the data. The project owner shall then ensure that the CRS, the PHA, and/or archaeological team members implement the plan, if allowed by the BLM, which shall include, but is not limited to the following tasks:</p>	<p>1. At least 45 days prior to ground disturbance, the project owner shall notify the CPM that mapping and in-field artifact analysis has ensued on historic-period sites with features.</p> <p>2. Within one week of completing data recovery at a site, the project owner shall submit to the CPM for review and approval a letter report written by the CRS, evidencing</p>	

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>CULTURAL RESOURCES (cont.)</b>		
<ol style="list-style-type: none"> <li>1. The project owner shall hire a PHA with the qualifications described in CUL-3 to supervise the field work.</li> <li>2. The project owner shall ensure that, prior to beginning the field work, the PHA and crew chief are trained by the DTCCL Historical Archaeologist, or equivalent qualified person approved by the CPM and hired by the project owner should the DTCCL Historical Archaeologist not be available, in the identification, analysis and interpretation of the artifacts, environmental modifications, and trash disposal patterns associated with the early phases of WWII land-based U.S. army activities, as researched and detailed by the DTCCL PI-Historian and the DTCCL Historical Archaeologist.</li> <li>3. The project owner shall ensure that, prior to beginning the field work, the field crew members are also trained in the consistent and accurate identification of the full range of late nineteenth and early-to-mid-twentieth-century can, bottle, and ceramic diagnostic traits.</li> <li>4. The project owner shall ensure that the original site map shall be updated to include at minimum: landform features such as small drainages, any man-made features, the limits of any artifact concentrations and features (previously known and newly found in the metal detector survey), using location recordation equipment that has the latest technology with sub-meter accuracy (such as UTM 11 North or California Teale Albers).</li> <li>5. The project owner shall ensure that a detailed in-field analysis of all artifacts shall be completed, if not done previously. Types of seams and closures for each bottle and all cans shall be documented. Photographs shall be taken of any text or designs. Unusual or unidentifiable artifacts may be collected for further analysis, but otherwise artifacts shall not be collected.</li> <li>6. The project owner shall ensure a systematic metal detector survey be completed at each site, and that each "hit" is investigated. All artifacts and features thus found must be mapped, measured, photographed, and fully described in writing.</li> <li>7. The project owner shall ensure that all features are recorded, and that any features having subsurface elements are excavated by a qualified historical archaeologist. All features and contents must be mapped, measured, photographed, and fully described in writing.</li> <li>8. The project owner shall ensure that the details of what is found at each site shall be presented in a letter report from the CRS or PHA which shall serve as a preliminary report, that details what was found at each site, as follows: <ol style="list-style-type: none"> <li>a. Letter reports may address one site, or multiple sites depending on the needs of the CRS; and</li> <li>b. The letter report shall be a concise document that provides a description of the schedule and methods used in the field effort, a preliminary tally of the numbers and types of features and deposits that were found, a discussion of the potential range of error for that tally, and a map showing the location of collection and/or excavation units, including topographic contours and the site landforms.</li> <li>c. The letter report shall make a recommendation on whether each site is a contributor to the DTCCL.</li> </ol> </li> <li>9. The project owner shall ensure that the data collected from the field work shall be provided to the DTCCL Historical Archaeologist to assist in the determination of which, if any, of the historic-period sites are contributing elements to the DTCCL.</li> </ol>	<p>that the field portion of data recovery at each site has been completed. When the CPM approves the letter report, ground disturbance may begin at the site location(s) that are the subject of the letter report.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>CULTURAL RESOURCES (cont.)</b>		
10. The project owner shall ensure that the PHA analyzes all recovered data and writes or supervises the writing of a comprehensive final report. This report shall be included in the CRR ( <b>CUL-6</b> ). Relevant portions of the information gathered shall be included in the possible NRHP nomination for the DTCCL (funded by <b>CUL-2</b> ).		
<b>CUL-15, Data Recovery on Historic-Period Roads:</b> The project owner shall ensure that a qualified architectural historian (must meet the U.S. Secretary of the Interior's Professional Qualifications Standards for historian, as published in Title 36, Code of Federal Regulations, part 61) conducts research and writes a report on the age and use of SMP-H-1032. The project owner shall provide the historian's report to the DTCCL PI-Historian for possible use in the DTCCL NRHP nomination, if appropriate. The project owner may undertake this task prior to Energy Commission certification of the project.	<ol style="list-style-type: none"> <li>At least 15 days prior to ground disturbance, the project owner shall submit to the CPM the historian's report documenting the age and historical use of the road.</li> <li>Within 15 days after the CPM approves the report, the project owner shall forward it to the DTCCL PI-Historian.</li> </ol>	CEC
<b>CUL-16, Compliance with BLM Programmatic Agreement:</b> If provisions in the BLM PSPP Programmatic Agreement and associated implementation and monitoring programs conflict with or duplicate these Conditions of Certification, the BLM provisions shall take precedence. Provisions in these Conditions that are additional to or exceed BLM provisions and represent requirements under the Energy Commission's CEQA responsibilities shall continue to apply to the project's activities, contingent on BLM's approval as authorized by federal law.		CEC
<b>HAZARDOUS MATERIALS MANAGEMENT</b>		
<b>HAZ-1, Hazardous Material Requirements:</b> The project owner shall not use any hazardous material not listed in, or in greater quantities or strengths than those identified by chemical name in Table 4.11-1 of Section 4.11, <i>Public Health and Safety</i> , unless approved in advance by the Compliance Project Manager (CPM).	The project owner shall provide to the CPM, in the Annual Compliance Report, a list of hazardous materials contained at the facility.	CEC
<b>HAZ-2, Hazardous Materials Business Plan (HMBP):</b> The project owner shall concurrently provide a Hazardous Materials Business Plan (HMBP), and Spill Prevention, Control, and Countermeasure Plan (SPCC), and a Process Safety Management Plan (PSMP) to the Riverside County Department of Environmental Health (RCDEH), to the Hazardous Materials Division of the Riverside County Fire Department (RCFD), and the CPM for review. After receiving comments from the RCDEH, Hazardous Materials Division of the RCFD and the CPM, the project owner shall reflect all received recommendations in the final documents. If no comments are received from the county within 30 days of submittal, the project owner may proceed with preparation of final documents upon receiving comments from the CPM. Copies of the final HMBP, RCFD shall then be provided to the Hazardous Materials Division of the Fire Department for information and to the CPM for approval.	At least 30 days prior to receiving any hazardous material on the site for commissioning or operations, the project owner shall provide a copy of a final Hazardous Materials Business Plan, Spill Prevention, Control, and Countermeasures Plan, and the Process Safety Management Plan to the CPM for approval.	CEC
<b>HAZ-3, Safety Management Plan:</b> The project owner shall develop and implement a Safety Management Plan for the delivery and handling of liquid and gaseous hazardous materials delivered by tanker truck or pipeline. The plan shall include procedures, protective equipment requirements, training and a checklist. It shall also include a section describing all measures to be implemented to prevent mixing of incompatible hazardous materials. This plan shall be applicable during construction, commissioning, and operation of the power plant.	At least 30 days prior to the delivery of any liquid or gaseous hazardous material to the facility, the project owner shall provide a Safety Management Plan as described above to the CPM for review and approval.	CEC/BLM

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>HAZARDOUS MATERIALS MANAGEMENT (cont.)</b>		
<p><b>HAZ-5, Construction Site Security Plan:</b> Prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and made available to the CPM for review and approval. The Construction Security Plan shall include the following:</p> <ol style="list-style-type: none"> <li>1. perimeter security consisting of fencing enclosing the construction area;</li> <li>2. security guards;</li> <li>3. site access control consisting of a check-in procedure or tag system for construction personnel and visitors;</li> <li>4. written standard procedures for employees, contractors and vendors when encountering suspicious objects or packages on site or off site;</li> <li>5. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency; and</li> <li>6. evacuation procedures.</li> </ol>	<p>At least 30 days prior to commencing construction, the project owner shall notify the CPM that a site-specific Construction Security Plan is available for review and approval.</p>	CEC
<p><b>HAZ-6, Operation Security Plan:</b> The project owner shall also prepare a Operation Security Plan for the operational phases and shall be made available to the CPM for review and approval. The project owner shall implement site security measures that address physical site security and hazardous materials storage. The level of security to be implemented shall not be less than that described below (as per NERC 2002).</p> <p>The Operation Security Plan shall include the following:</p> <ol style="list-style-type: none"> <li>1. Permanent full perimeter fence or wall, eight feet tall around the Power Block and Solar Field;</li> <li>2. Main entrance security gate, either hand operatable or motorized;</li> <li>3. Evacuation procedures;</li> <li>4. Protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;</li> <li>5. Written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on site or off site;</li> <li>6. A statement (refer to sample, <b>ATTACHMENT A</b>), signed by the project owner certifying that background investigations have been conducted on all project personnel. Background investigations shall be restricted to determine the accuracy of employee identity and employment history and shall be conducted in accordance with state and federal laws regarding security and privacy;</li> </ol> <p>A statement(s) (refer to sample, <b>ATTACHMENT B</b>), signed by the contractor or authorized representative(s) for any permanent contractors or other technical contractors (as determined by the CPM after consultation with the project owner), that are present at any time on the site to repair, maintain, investigate, or conduct any other technical duties involving critical components (as determined by the CPM after consultation with the project owner) certifying that background investigations have been conducted on contractors who visit the project site. Background investigations shall be restricted to ascertaining the accuracy of employee identity and employment history, and shall be conducted in accordance with state and federal law regarding security and privacy;</p>	<p>At least 30 days prior to the initial receipt of hazardous materials on site, the project owner shall notify the CPM that a site-specific operations site security plan is available for review and approval. In the annual compliance report, the project owner shall include a statement that all current project employee and appropriate contractor background investigations have been performed, and that updated certification statements have been appended to the operations security plan. In the annual compliance report, the project owner shall include a statement that the operations security plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.</p>	CEC



### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>HAZARDOUS MATERIALS MANAGEMENT (cont.)</b>		
<p>7. Site access controls for employees, contractors, vendors, and visitors;</p> <p>8. Closed circuit TV (CCTV) monitoring system, recordable, and viewable in the power plant control room and security station (if separate from the control room) with cameras capable of viewing, at a minimum, the main entrance; and</p> <p>9. Additional measures to ensure adequate perimeter security consisting of either:</p> <p>A. Security guard present 24 hours per day, seven days per week; <b>or</b></p> <p>B. Power plant personnel on site 24 hours per day, 7 days per week, and one of the following:</p> <p>1) The CCTV monitoring system required in number 8 above shall include cameras that are able to pan, tilt, and zoom (PTZ), have low-light capability, are recordable, and are able to view 100% of the perimeter fence to the power block, the outside entrance to the control room, and the front gate from a monitor in the power plant control room; OR</p> <p>2) Perimeter breach detectors or on-site motion detectors for the power block.</p> <p>The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to those security plans. The CPM may authorize modifications to these measures, or may require additional measures, such as protective barriers for critical power plant components (e.g. transformers, gas lines, compressors, etc.) depending upon circumstances unique to the facility or in response to industry-related standards, security concerns, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Council, after consultation with both appropriate law enforcement agencies and the applicant.</p>		
<b>PUBLIC HEALTH AND SAFETY</b>		
<p><b>PUBLIC HEALTH-1, Cooling Water Management Plan:</b> The Project owner shall develop and implement a Cooling Water Management Plan to ensure that the potential for bacterial growth in cooling water is kept to a minimum. The Plan shall be consistent with either staff's "Cooling Water Management Program Guidelines" or with the Cooling Technology Institute's "Best Practices for Control of Legionella" guidelines but in either case, the Plan must include sampling and testing for the presence of Legionella bacteria at least every 6 months. After 2 years of power plant operations, the Project owner may ask the CPM to re-evaluate and revise the Legionella bacteria testing requirement.</p>	At least 60 days prior to the commencement of cooling tower operations, the Cooling Water Management Plan shall be provided to the CPM for review and approval.	CEC
<b>LAND USE, RECREATION, AND WILDERNESS</b>		
<p><b>LAND-1, Submittals to the CPM Prior to Construction:</b> Prior to the start of construction, the Applicant shall provide to the Compliance Project Manager (CPM) documentation of the U.S. Bureau of Land Management (BLM) Right-of-Way grant and the BLM-approved project-specific amendment to the California Desert Conservation Area Plan (CDCA) permitting the construction/operation of the proposed Palen Solar Power Project.</p>	Prior to the start of construction, the Applicant shall submit to the CPM a copy of the BLM approved project specific amendment to the CDCA Plan permitting the Palen Solar Power Project.	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>NOISE</b>		
<p><b>NOISE-1, Public Notification Process:</b> At least 15 days prior to the start of ground disturbance, the project owner shall notify all residents within one mile of the project site and the linear facilities, by mail or by other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the project. If the telephone is not staffed 24 hours a day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall be posted at the project site during construction where it is visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.</p>	<p>Prior to ground disturbance, the project owner shall transmit to the compliance project manager (CPM) a statement, signed by the project owner's project manager, stating that the above notification has been performed, and describing the method of that notification. This communication shall also verify that the telephone number has been established and posted at the site, and shall provide that telephone number.</p>	CEC
<p><b>NOISE-2, Noise Complaint Process:</b> Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints. The project owner or authorized agent shall:</p> <ol style="list-style-type: none"> <li>1. use the Noise Complaint Resolution Form (below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;</li> <li>2. attempt to contact the person(s) making the noise complaint within 24 hours;</li> <li>3. conduct an investigation to determine the source of noise in the complaint;</li> <li>4. if the noise is project related, take all feasible measures to reduce the source of the noise; and</li> <li>5. submit a report documenting the complaint and actions taken. The report shall include: a complaint summary, including the final results of noise reduction efforts and, if obtainable, a signed statement by the complainant stating that the noise problem has been resolved to the complainant's satisfaction.</li> </ol>	<p>Within five days of receiving a noise complaint, the project owner shall file a Noise Complaint Resolution Form, shown below, with both the local jurisdiction and the CPM, that documents the resolution of the complaint. If mitigation is required to resolve the complaint, and the complaint is not resolved within a 3-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is performed and complete.</p>	CEC
<p><b>NOISE-3, Employee Noise Control Program:</b> The project owner shall submit to the CPM for review and approval a noise control program. The noise control program shall be used to reduce employee exposure to high (above permissible) noise levels during construction in accordance to the applicable OSHA and Cal-OSHA standards.</p>	<p>At least 30 days prior to the start of ground disturbance, the project owner shall submit the noise control program to the CPM. The project owner shall make the program available to Cal-OSHA upon request.</p>	CEC
<p><b>NOISE-4, Noise Restrictions:</b> The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the operation of the project will not cause the noise levels due to plant operation alone, during the daytime hours of 7 a.m. to 10 p.m. to exceed an average of 42 dBA Leq measured at or near monitoring location LT1.</p> <p>No new pure-tone components shall be caused by the project. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.</p> <p>A. When the project first achieves a sustained output of 85% or greater of rated capacity, the project owner shall conduct a 25 hour community noise survey at monitoring location LT1, or at a closer location acceptable to the CPM. This survey shall also include measurement of one-third octave band sound pressure levels to ensure that no new pure-tone noise components have been caused by the project.</p>	<p>The survey shall take place within 30 days of the project first achieving a sustained output of 85% or greater of rated capacity. Within 15 days after completing the survey, the project owner shall submit a summary report of the survey to the CPM. Included in the survey report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limit, and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>NOISE (cont.)</b>		
<p>The measurement of power plant noise for the purposes of demonstrating compliance with this condition of certification may alternatively be made at a location, acceptable to the CPM, closer to the plant (e.g., 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the plant noise contribution at the affected residence. The character of the plant noise shall be evaluated at the affected receptor locations to determine the presence of pure tones or other dominant sources of plant noise.</p> <p>B. If the results from the noise survey indicate that the power plant noise at the affected receptor site exceeds the above value during the above time period, mitigation measures shall be implemented to reduce noise to a level of compliance with this limit.</p> <p>C. If the results from the noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.</p>	<p>Within 15 days of completion of the new survey, the project owner shall submit to the CPM a summary report of the new noise survey, performed as described above and showing compliance with this condition.</p>	
<p><b>NOISE-5, Occupational Noise Survey:</b> Following the project's attainment of a sustained output of 85% or greater of its rated capacity, the project owner shall conduct an occupational noise survey to identify any noise hazardous areas in the facility.</p> <p>The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations, sections 5095 5099 (Article 105) and Title 29, Code of Federal Regulations, section 1910.95. The survey results shall be used to determine the magnitude of employee noise exposure.</p> <p>The project owner shall prepare a report of the survey results and, if necessary, identify proposed mitigation measures to be employed in order to comply with the applicable California and federal regulations.</p>	<p>Within 30 days after completing the survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to OSHA and Cal-OSHA upon request.</p>	CEC
<p><b>NOISE-6, Construction Restrictions:</b> Heavy equipment operation and noisy construction work relating to any project features shall be restricted to the times delineated below, unless a special permit has been issued by the County of Riverside:</p> <p>Mondays through Fridays: June through September: 6 a.m. to 7 p.m. October through May: 6 a.m. to 6 p.m.</p> <p>Saturdays: 9 a.m. to 5 p.m.</p> <p>Sundays and Federal holidays: No Construction Allowed</p> <p>Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.</p>	<p>Prior to ground disturbance, the project owner shall transmit to the CPM a statement acknowledging that the above restrictions will be observed throughout the construction of the project.</p>	CEC
<p><b>NOISE-7, High-Pressure Steam Blow Requirements:</b> If a traditional, high-pressure steam blow process is used the project owner shall equip steam blow piping with a temporary silencer that quiets the noise of steam blows to no greater than 89 dBA measured at a distance of 100 feet. The steam blows shall be conducted between 8:00 a.m. and 5:00 p.m. unless arranged with the CPM such that offsite impacts would not cause annoyance to receptors. If a low-pressure, continuous steam blow process is used, the project owner shall submit to the CPM a description of the process, with expected noise levels and planned hours of steam blow operation.</p>	<p>At least 15 days prior to the first steam blow, the project owner shall notify all residents or business owners within one mile of the project site boundary. The notification may be in the form of letters, phone calls, fliers, or other effective means as approved by the CPM. The notification shall include a description of the purpose and nature of the steam blow(s), the planned schedule, expected sound levels, and explanation that it is a one-time activity and not part of normal plant operation.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>SOIL AND WATER</b>		
<p><b>SOIL&amp;WATER-1, Drainage Erosion and Sedimentation Control Plan (DESCP):</b> Prior to site mobilization, the project owner shall obtain the Compliance Project Manager (CPM) approval of the Drainage Erosion and Sedimentation Control Plan (DESCP) for managing stormwater during Project construction and operations as normally administered by the County of Riverside. The DESCP must ensure proper protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, include provisions for sediment and stormwater retention from both the power block, solar fields and transmission right of way to meet any Riverside County requirements, address exposed soil treatments in the solar fields for both road and non-road surfaces, and identify all monitoring and maintenance activities. The plan must also cover all linear project features such as offsite transmission mains. The DESCP shall contain, at minimum, the elements presented below that outline site management activities and erosion and sediment-control Best Management Practices (BMP) to be implemented during site mobilization, excavation, construction, and post construction (operating) activities.</p> <p><b>A. Vicinity Map</b> – A map(s), at a minimum scale 1 inch to 500 feet, shall be provided indicating the location of all Project elements (construction sites, laydown area, pipelines) with depictions of all significant geographic features including swales, storm drains, and sensitive areas.</p> <p><b>B. Site Delineation</b> – All areas subject to soil disturbance for the proposed Project (Project phases, laydown area, all linear facilities, landscaping areas, and any other Project elements) shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures, pipelines, roads, and drainage facilities.</p> <p><b>C. Watercourses and Critical Areas</b> – The DESCP shall show the location of all nearby watercourses including swales, storm drains, and drainage ditches. It shall indicate the proximity of those features to the proposed Project construction, laydown, and landscape areas and all transmission and pipeline construction corridors.</p> <p>a. The DESCP shall describe how the project will avoid or minimize impacts to Palen-McCoy Valley sand corridor,</p> <p>b. All proposed linear features (with the exception of Power Pylons) shall be constructed flush with the surrounding ground surface and without ground level obstructions.</p> <p><b>D. Drainage Map</b> – The DESCP shall provide a topographic site map(s), at a minimum scale of 1 inch to 200 feet, showing existing, interim, and proposed drainage swales and drainage systems and drainage-area boundaries. On the map, spot elevations are required where relatively flat conditions exist. The spot elevations and contours shall be extended off site for a minimum distance of 100 feet.</p> <p><b>E. Drainage of Project Site Narrative</b> – The DESCP shall include a narrative of the drainage measures necessary to protect the site and potentially affected soil and water resources within the drainage downstream of the site. The narrative shall include the summary pages from the hydraulic analysis prepared by a professional engineer and erosion control specialist. The narrative shall state the watershed size(s) in acres that was used in the calculation of drainage features.</p> <p><b>F. Clearing and Grading Plans</b> – The DESCP shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross sections, or other means. The locations of any disposal areas, fills, or other special features shall also be shown. Existing and proposed topography shall be illustrated by tying in proposed contours with existing topography.</p> <p><b>G. Clearing and Grading Narrative</b> – The DESCP shall include a table with the estimated quantities of material excavated or filled for the site and all Project elements (Project site, laydown area, transmission and pipeline corridors, roadways, and bridges) whether such excavation or fill is temporary or permanent, and the amount of such material to be imported or exported.</p>	<p>No later than 30 days prior to start of site mobilization, the Project owner shall submit a copy of the final DESCP to the County of Riverside, the CRBRWQCB, and the CPM for review and comment and to the County of Riverside and the CRBRWQCB if required. The CPM shall consider comments if received by the county and CRBRWQCB before approval of the DESCP.</p> <p>The DESCP shall be consistent with the grading and drainage plan and relevant portions of the DESCP shall clearly show approval by the chief building official. The DESCP shall be a separate plan from the SWPPP developed in conjunction with any National Pollutant Discharge Elimination System (NPDES) permit for construction Activity. The project owner shall provide in the monthly compliance report with a narrative on the effectiveness of the drainage, erosion, and sediment-control measures and the results of monitoring and maintenance activities. Once operational, the project owner shall update and maintain the ESCP for the life of the Project and shall provide in the annual compliance report information on the results of monitoring and maintenance activities.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>SOIL AND WATER (cont.)</b>		
<p><b>H. Soil Wind and Water Erosion Control</b> – The plan shall address exposed soil treatments to be used during construction and operation of the proposed Project for both road and non-road surfaces including specifically identifying all chemical based dust palliatives, soil bonding, and weighting agents appropriate for use at the proposed Project site that would not cause adverse effects to vegetation. BMPs shall include measures designed to prevent wind and water erosion including application of chemical dust palliatives after rough grading to limit water use. All dust palliatives, soil binders, and weighting agents shall be approved by the CPM prior to use.</p> <p><b>I. Best Management Practices Plan</b> – The DESCP shall identify on the topographic site map(s) the location of the site specific BMPs to be employed during each phase of construction (initial grading, Project element excavation and construction, and final grading/stabilization). BMPs shall include measures designed to control dust, stabilize construction access roads and entrances, and control stormwater runoff and sediment transport.</p> <p><b>J. Best Management Practices Narrative</b> – The DESCP shall show the location (as identified in (I) above), timing, and maintenance schedule of all erosion- and sediment-control BMPs to be used prior to initial grading, during all Project element (site, pipelines) excavations and construction, final grading/stabilization, and operation. Separate BMP implementation schedules shall be provided for each Project element for each phase of construction. The maintenance schedule shall include post-construction maintenance of structural-control BMPs, or a statement provided about when such information would be available.</p> <p><b>K. Project Schedule</b> – The DESCP shall identify on the topographic site map the location of the site-specific BMPs to be employed during each phase of construction (initial grading, Project element construction, and final grading/stabilization). Separate BMP implementation schedules shall be provided for each Project element for each phase of construction.</p> <p><b>L. Erosion Control Drawings</b> – The erosion-control drawings and narrative shall be designed, stamped and sealed by a professional engineer or erosion control specialist.</p> <p><b>M. Agency Comments</b> – The DESCP shall include copies of recommendations, conditions, and provisions from the County of Riverside, California Department of Fish and Game (CDFG), and Colorado River Basin Regional Water Quality Control Board (CRBRWQCB).</p> <p><b>N. Monitoring Plan:</b> Monitoring activities shall include routine measurement of the volume of accumulated sediment in the onsite drainage ditches, and stormwater diversions. The monitoring plan shall be part of the Channel Monitoring and Maintenance Plan, <b>SOIL&amp;WATER-12</b>.</p>		
<p><b>SOIL&amp;WATER-2, Groundwater Wells, Pre-Well Installation:</b> The project owner proposes to construct and operate up to ten (10) onsite groundwater water supply wells that produce water from the CVGB. The project owner shall ensure that the wells are completed in accordance with all applicable state and local water well construction permits and requirements. Prior to initiation of well construction activities, the project owner shall submit for review and comment a well construction packet to the County of Riverside and fees normally required for the county's well permit, with copies to the CPM. The Project shall not construct a well or extract and use groundwater until approval has been issued by the County and the CPM to construct and operate the well. Wells permitted and installed as part of preconstruction field investigations that subsequently are planned for use as project water supply wells require CPM approval prior to their use to supply water to the project.</p> <p><b>Post-Well Installation.</b> The project owner shall provide documentation as required under County permit conditions to the CPM that the well has been properly completed. In accordance with California's Water Code section 13754, the driller of the well shall submit to the DWR a Well Completion Report for each well installed. The project owner shall ensure the Well</p>	<p>The project owner shall do all of the following:</p> <ol style="list-style-type: none"> <li>No later than 60 days prior to the construction of the onsite groundwater production wells, the project owner shall submit to the CPM a copy of the water well construction packet submitted to the County of Riverside.</li> <li>No later than 30 days prior to the construction of the onsite groundwater production wells, the project owner shall submit a copy of written concurrence received from the County of Riverside that the proposed well construction activities comply with all county well requirements and meet the requirements established by the county's water</li> </ol>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>SOIL AND WATER (cont.)</b>		
<p>Completion reports are submitted. The project owner shall ensure compliance with all county water well standards and the County requirements for the life of the wells, and shall provide the CPM with two (2) copies each of all monitoring or other reports required for compliance with the County of Riverside water well standards and operation requirements, as well as any changes made to the operation of the well.</p>	<p>well permit program. The CPM will provide approval to the project owner of the well location and operation within 10 days of receipt of the County of Riverside's concurrence with the proposed well construction activities.</p> <p>c. No later than 60 days after installation of each well at the Project site, the project owner shall ensure that the well driller submits a Well Completion Report to the DWR with a copy provided to the CPM. The project owner shall submit to the CPM together with the Well Completion Report a copy of well drilling logs, water quality analyses, and any inspection reports. Additionally no later than 60 days after installation of each well (including closure of any associated mud pits) the project owner shall submit documentation to the CPM and the CRBWQCB that well drilling activities were conducted in compliance with Title 23, California Code of Regulations, Chapter 15, Discharges of Hazardous Wastes to Land, (23 CCR, sections 2510 et seq.) and that any onsite drilling sumps used for Project drilling activities were removed in compliance with 23 CCR section 2511(c).</p> <p>d. During well construction and for the operational life of the well, the project owner shall submit two copies each to the CPM of any proposed well construction or operation changes.</p>	
<p><b>SOIL&amp;WATER-3, Construction and Operation Water Use:</b> The proposed Project's use of groundwater during construction shall not exceed 400 afy (total of 1,130 af during the 34 months) during construction and 201 afy during operation. Water quality used for project construction and operation shall be reported in accordance with Condition of Certification <b>SOIL&amp;WATER-18</b> to ensure compliance with this condition.</p> <p>Prior to the use of groundwater for construction, the project owner shall install and maintain metering devices as part of the water supply and distribution system to document Project water use and to monitor and record in gallons per day the total volume(s) of water supplied to the Project from this water source. The metering devices shall be operational for the life of the Project.</p>	<p>At least 60 days prior to the start of construction of the proposed Project, the project owner shall submit to the CPM a copy of evidence that metering devices have been installed and are operational. Beginning six months after the start of construction, the project owner shall prepare a semi-annual summary of amount of water used for construction purposes. The summary shall include the monthly range and monthly average of daily water usage in gallons per day.</p> <p>The project owner shall prepare an annual summary, which shall include daily usage, monthly range and monthly average of daily water usage in gallons per day, and total water used on a monthly and annual basis in acre-feet. For years subsequent to the initial year of operation, the annual summary shall also include the yearly range and yearly average water use by source. For calculating the total water use, the term "year" shall correspond to the date established for the annual compliance report submittal.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>SOIL AND WATER (cont.)</b>		
<p><b>SOIL&amp;WATER-4, Groundwater Level Monitoring, Mitigation and Reporting:</b> The project owner shall submit a Groundwater Level Monitoring, Mitigation, and Reporting Plan to the CPM for review and approval in advance of construction activities and prior to the operation of onsite groundwater supply wells. The Groundwater Level Monitoring, Mitigation, and Reporting Plan shall provide detailed methodology for monitoring background and site groundwater levels. Monitoring shall include pre-construction, construction, and Project operation water use. The plan shall establish pre-construction and Project related groundwater level and water quality trends that can be quantitatively compared against observed and simulated trends near the Project pumping wells and near potentially impacted existing wells.</p> <p><b>A. Prior to Project Construction</b></p> <ol style="list-style-type: none"> <li>1. A well reconnaissance shall be conducted to investigate and document the condition of existing water supply wells located within 3 miles of the project site, provided that access is granted by the well owners. The reconnaissance shall include sending notices by registered mail to all property owners within a 3 mile radius of the project area.</li> <li>2. Monitor to establish preconstruction conditions. The monitoring plan and network of monitoring wells shall make use of existing wells in the basin that would satisfy the requirements for the monitoring program. The monitoring network shall be defined by the groundwater model developed for the AFC as the area predicted to show a water level change of 1 foot or more at the end of construction and at the end of operation and any monitoring wells that are installed to comply with Waste Discharge Requirements issued by the Energy Commission for the evaporation ponds and land treatment unit associated with the Project. The projected area of groundwater drawdown shall be refined on an annual basis during project construction and every three (3) years during project operations using the data acquired as part of Condition of Certification SOIL&amp;WATER-4 as well as the numerical groundwater model developed as part of the AFC and subsequent Data Responses by the applicant. If the area predicted to show a water level change of 1 foot increases, the project owner will be required to submit a revised monitoring plan with additional monitoring wells (if required).</li> <li>3. Identified additional wells shall be located outside of this area to serve as background monitoring wells. Abandoned wells, or wells no longer in use, that are accessible and provide reliable water level data within the potentially impacted area shall also be included as part of the monitoring network. A site reconnaissance shall be performed to identify wells that could be accessible for monitoring. As access to these wells is available, historic water level, water quality, well construction and well performance information shall be obtained for both pumping and non-pumping conditions.</li> <li>4. As access allows, measure groundwater levels from the off-site and on-site wells within the network and background wells to provide initial groundwater levels for pre-project trend analysis.</li> <li>5. Construct water level maps within the CVGB within 5 miles of the site from the groundwater data collected prior to construction. Update trend plots and statistical analyses, as data is available.</li> </ol> <p><b>B. During Construction:</b></p> <ol style="list-style-type: none"> <li>1. Collect water levels from wells within the monitoring network and flows from seeps and or springs on a quarterly basis throughout the construction period and at the end of the construction period. Perform statistical trend analysis for water levels. Assess the significance of an apparent trend and estimate the magnitude of that trend.</li> </ol>	<p>The project owner shall do all of the following:</p> <p>At least 60 days prior to operation of the site groundwater supply wells, the project owner shall submit to the CPM, a comprehensive report presenting all the data and information required in item A above. The CPM will provide comments to the plan 15 days following submittal, and the final plan shall be approved 15 days prior to operation of the site groundwater supply wells. The project owner shall submit to the CPM all calculations and assumptions made in development of the report data and interpretations. During Project construction, the project owner shall submit to the CPM quarterly reports presenting all the data and information required in item B above. The quarterly reports shall be provided 30 days following the end of the quarter. The project owner shall also submit to the CPM all calculations and assumptions made in development of the report data and interpretations.</p> <p>No later than March 31 of each year of construction or 60 days prior to Project operation, the project owner shall provide to the CPM for review and approval, documentation showing that any mitigation to private well owners during Project construction was satisfied, based on the requirements of the property owner as determined by the CPM.</p> <p>During Project operation, the project owner shall submit to the CPM, applicable quarterly, semi-annual and annual reports presenting all the data and information required in item C above. Quarterly reports shall be submitted to the CPM 30 days following the end of the quarter. The fourth quarter report shall serve as the annual report and shall be provided on January 31 in the following year.</p> <p>The project owner shall submit to the CPM all calculations and assumptions made in development of report data and interpretations, calculations, and assumptions used in development of any reports.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>SOIL AND WATER (cont.)</b>		
<p><b>C. During Operation:</b></p> <ol style="list-style-type: none"> <li>On a quarterly basis for the first year of operation and semiannually thereafter for the following four years, collect water level measurements from any wells identified in the groundwater monitoring program to evaluate operational influence from the Project. Quarterly operational parameters (i.e., pumping rate) of the water supply wells shall be monitored. Additionally, quarterly groundwater-use in the CVGB shall be estimated based on available data.</li> <li>On an annual basis, perform statistical trend analysis for water levels data and comparison to predicted water level declines due to project pumping. Analysis of the significance of an apparent trend shall be determined and the magnitude of that trend estimated. Based on the results of the statistical trend analyses and comparison to predicted water level declines due to Project pumping, the project owner shall determine the area where the Project pumping has induced a drawdown in the water supply at a level of 5 feet or more below the baseline trend.</li> <li>If water levels have been lowered more than 5 feet below presite operational trends, and monitoring data provided by the project owner show these water level changes are different from background trends and are caused by Project pumping, then the project owner shall provide mitigation to the impacted well owner(s). Mitigation shall be provided to the impacted well owners that experience 5 feet or more of Project-induced drawdown if the CPM's inspection of the well monitoring data confirms changes to water levels and water level trends relative to measured pre-project water levels, and the well (private owners well in question) yield or performance has been significantly affected by Project pumping. The type and extent of mitigation shall be determined by the amount of water level decline induced by the Project, the type of impact, and site specific well construction and water use characteristics. If an impact is determined to be caused by drawdown from more than one source, the level of mitigation provided shall be proportional to the amount of drawdown induced by the Project relative to other sources. In order to be eligible, a well owner must provide documentation of the well location and construction, including pump intake depth, and that the well was constructed and usable before Project pumping was initiated. The mitigation of impacts shall be determined as follows: <ol style="list-style-type: none"> <li>If Project pumping has lowered water levels by 5 feet or more and increased pumping lifts, increased energy costs shall be calculated. Payment or reimbursement for the increased costs shall be provided at the option of the affected well owner on an annual basis. In the absence of specific electrical use data supplied by the well owner, the project owner shall use <b>SOIL&amp;WATER-5</b> to calculate increased energy costs.</li> <li>If groundwater monitoring data indicate Project pumping has lowered water levels below the top of the well screen, and the well yield is shown to have decreased by 10% or more of the pre-Project average seasonal yield, compensation shall be provided for the diagnosis and maintenance to treat and remove encrustation from the well screen. Reimbursement shall be provided at an amount equal to the customary local cost of performing the necessary diagnosis and maintenance for well screen encrustation. Should the well yield reductions be recurring, the project owner shall provide payment or reimbursement for periodic maintenance throughout the life of the Project. If with treatment the well yield is incapable of meeting 110% of the well owner's maximum daily demand, dry season demand, or annual demand the well owner should be compensated by reimbursement or well replacement as described under Condition 3.c.</li> <li>If Project pumping has lowered water levels to significantly impact well yield so that it can no longer meet its intended purpose, causes the well to go dry, or cause casing collapse, payment or reimbursement of an amount equal to the cost of deepening or replacing the well shall be provided to accommodate these effects. Payment or reimbursement shall be at an amount equal to the customary local cost of deepening the existing well or constructing a new well of comparable design and yield (only deeper). The demand for water, which determines the</li> </ol> </li> </ol>	<p>After the first five year operational and monitoring period, the project owner shall submit a 5 year monitoring report to the CPM that includes all monitoring data collected and a summary of the findings. The CPM will determine if the water level measurements and water quality sampling frequencies should be revised or eliminated.</p>	



## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>SOIL AND WATER (cont.)</b>		
<p>required well yield, shall be determined on a per well basis using well owner interviews and field verification of property conditions and water requirements compiled as part of the pre-project well reconnaissance. Well yield shall be considered significantly impacted if it is incapable of meeting 110% of the well owner's maximum daily demand, dry-season demand, or annual demand – assuming the pre-project well yield documented by the initial well reconnaissance met or exceeded these yield levels.</p> <p>d. The project owner shall notify any owners of the impacted wells within one month of the CPM approval of the compensation analysis for increased energy costs.</p> <p>e. Pump lowering – In the event that groundwater is lowered as a result of Project pumping to an extent where pumps are exposed but well screens remain submerged the pumps shall be lowered to maintain production in the well. The Project shall reimburse the impacted well owner for the costs associated with lowering pumps.</p> <p>f. Deepening of wells – If the groundwater is lowered enough as a result of Project pumping that well screens and/or pump intakes are exposed, and pump lowering is not an option, such affected wells shall be deepened or new wells constructed. The project owner shall reimburse the impacted well owner for all costs associated with deepening existing wells or constructing new wells shall be borne by the project owner.</p> <p>4. After the first five-year operational and monitoring period the CPM shall evaluate the data and determine if the monitoring program for water level measurements should be revised or eliminated. Revision or elimination of any monitoring program elements shall be based on the consistency of the data collected. The determination of whether the monitoring program should be revised or eliminated shall be made by the CPM.</p> <p>5. If mitigation includes monetary compensation, the project owner shall provide documentation to the CPM that compensation payments have been made by March 31 of each year of Project operation or, if lump-sum payments are made, payment is made by March 31 following the first year of operation only. Within 30 days after compensation is paid, the project owner shall submit to the CPM a compliance report describing compensation for increased energy costs necessary to comply with the provisions of this condition.</p> <p>6. At the end of every subsequent five-year monitoring period, the collected data shall be evaluated by the CPM and they shall determine if the sampling frequency should be revised or eliminated.</p> <p>7. During the life of the Project, the project owner shall provide to the CPM all monitoring reports, complaints, studies and other relevant data within 10 days of being received by the project owner.</p>		
<p><b>SOIL&amp;WATER-5, Increased Energy Costs :</b> Where it is determined that the project owner shall reimburse a private well owner for increased energy costs identified as a result of analysis performed in Condition of Certification <b>SOIL&amp;WATER-4</b>, the project owner shall calculate the compensation owed to any owner of an impacted well as described below. Increased Cost for Energy = Change in lift/total system head x total energy consumption x costs/unit of energy</p> <p>Where:</p> <p>Change in lift (ft) = calculated change in water level in the well resulting from project total system head (ft) = elevation head + discharge pressure head  elevation head (ft) = difference in elevation between wellhead discharge pressure gauge and water level in well during pumping.</p> <p>discharge pressure head (ft) = pressure at wellhead discharge gauge (psi) X 2.31</p>	<p>The project owner shall do all of the following:</p> <ol style="list-style-type: none"> <li>1. No later than 30 days after CPM approval of the well drawdown analysis, the project owner shall submit to the CPM for review and approval all documentation and calculations describing necessary compensation for energy costs associated with additional lift requirements.</li> <li>2. The project owner shall submit to the CPM all calculations, along with any letters signed by the well owners indicating agreement with the calculations, and the name and phone numbers of those well owners that do not agree with the calculations.</li> </ol>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>SOIL AND WATER (cont.)</b>		
<p>The project owner shall submit to the CPM for review and approval the documentation showing which well owners must be compensated for increased energy costs and that the proposed amount is sufficient compensation to comply with the provisions of this condition.</p> <ol style="list-style-type: none"> <li>Any reimbursements (either lump sum or annual) to impacted well owners shall be only to those well owners whose wells were in service within six months of the Commission decision and within a 5-mile radius of the project site.</li> <li>The project owner shall notify all owners of the impacted wells within one month of the CPM approval of the compensation analysis for increase energy costs.</li> <li>Compensation shall be provided on either a one-time lump-sum basis, or on an annual basis, as described below. <p><b>Annual Compensation:</b> Compensation provided on an annual basis shall be calculated prospectively for each year by estimating energy costs that will be incurred to provide the additional lift required as a result of the project. With the permission of the impacted well owner, the project owner shall provide energy meters for each well or well field affected by the project. The impacted well owner to receive compensation must provide documentation of energy consumption in the form of meter readings or other verification of fuel consumption. For each year after the first year of operation, the project owner shall include an adjustment for any deviations between projected and actual energy costs for the previous calendar year.</p> <p><b>One-Time Lump-Sum Compensation:</b> Compensation provided on a one-time lump-sum basis shall be based on a well-interference analysis, assuming the maximum project-pumping rate of 300 afy. Compensation associated with increased pumping lift for the life of the project shall be estimated as a lump sum payment as follows:</p> </li> <li>The current cost of energy to the affected party considering time of use or tiers of energy cost applicable to the party's billing of electricity from the utility providing electric service, or a reasonable equivalent if the party independently generates their electricity;</li> <li>An annual inflation factor for energy cost of 3%; and</li> <li>A net present value determination assuming a term of 30 years and a discount rate of 9%;</li> </ol>	<p>Compensation payments shall be made by March 31 of each year of project operation or, if lump-sum payment is selected, payment shall be made by March 31 of the first year of operation only. Within 30 days after compensation is paid, the project owner shall submit to the CPM a compliance report describing compensation for increased energy costs necessary to comply with the provisions of this condition.</p>	
<p><b>SOIL&amp;WATER-6, Water Discharge Requirements:</b> The project owner shall comply with the requirements specified in Appendix B, C, and D. These requirements relate to discharges, or potential discharges, of waste that could affect the quality of waters of the state, and were developed in consultation with staff of the State Water Resources Control Board and/or the applicable California Regional Water Quality Control Board (hereafter "Water Boards"). It is the Commission's intent that these requirements be enforceable by both the Commission and the Water Boards. In furtherance of that objective, the Commission hereby delegates the enforcement of these requirements, and associated monitoring, inspection and annual fee collection authority, to the Water Boards. Accordingly, the Commission and the Water Board shall confer with each other and coordinate, as needed, in the enforcement of the requirements. The project owner shall pay the annual waste discharge permit fee associated with this facility to the Water Boards. In addition, the Water Boards may "prescribe" these requirements as waste discharge requirements pursuant to Water Code Section 13263 solely for the purposes of enforcement, monitoring, inspection, and the assessment of annual fees, consistent with Public Resources Code Section 25531, subdivision (c).</p>	<p>The Project owner shall follow the groundwater quality monitoring requirements as provided in SOIL&amp;WATER-18 by providing Groundwater Quality Monitoring and Reporting Plan 90 days prior to operation of water supply wells for construction activities. The plan shall provide methods and procedures for monitoring background water quality, and site groundwater quality related to operation of the waste management units. Well locations, groundwater sampling procedures and analytical methods shall be provided consistent with requirements stipulated in the Waste Discharge Requirements provided in Appendix B, C and D.</p> <p>No later than 60 days prior to any wastewater discharge or use of land treatment units, the project owner shall provide documentation to the CPM, with copies to the CRBRWQCB,</p>	CEC

APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
SOIL AND WATER (cont.)		
	demonstrating compliance with the WDRs established in Appendices B, C, and D. Any changes to the design, construction, or operation of the evaporation basins, treatment units, or storm water system shall be requested in writing to the CPM, with copies to the CRBRWQCB, and approved by the CPM, in consultation with the CRBRWQCB, prior to initiation of any PSPP Soil and Water Opening Testimony Page 5 changes. The project owner shall provide to the CPM, with copies to the CRBRWQCB, all monitoring reports required by the WDRs, and fully explain any violations, exceedances, enforcement actions, or corrective actions related to construction or operation of the evaporation basins or treatment units.	
<b>SOIL&amp;WATER-7, Septic System and Leach Field Requirements:</b> The project owner shall comply with the requirements of the County of Riverside Ordinance Code Title 8, Chapter 8.124 and the California Plumbing Code (California Code of Regulations Title 24, Part 5) regarding sanitary waste disposal facilities such as septic systems and leach fields. The septic system and leach fields shall be designed, operated, and maintained in a manner that ensures no deleterious impact to groundwater or surface water. Compliance shall include an engineering report on the septic system and leach field design, operation, maintenance, and loading impact to groundwater.	The project owner shall submit all necessary information and the appropriate fee to the County of Riverside and the CRBRWQCB to ensure that the project has complied with county and state sanitary waste disposal facilities requirements. Written assessments prepared by the County of Imperial and the CRBRWQCB regarding the project's compliance with these requirements must be submitted to the AO and CPM for review and approval 30-days prior to the start of power plant operation.	CEC
<p><b>SOIL&amp;WATER-14, Mitigation of Impacts to the Palo Verde Mesa Groundwater Basin:</b> To mitigate the impact from Project pumping, the Project owner shall identify and implement offset measures to mitigate the increase in discharge from surface water to groundwater that affects recharge in the Palo Verde Valley Groundwater Basin (USGS). The project owner shall implement <b>SOIL&amp;WATER-17</b> to evaluate the change in recharge over the life of the project including any latency effects from Project pumping. The activities shall include the following water conservation projects: payment for irrigation improvements in Palo Verde Irrigation District, payment for irrigation improvements in Imperial Irrigation District, purchase of water rights within the Colorado River Basin that will be held in reserve, and/or BLM's Tamarisk Removal Program or other proposed mitigation activities acceptable to the CPM. The activities proposed for mitigation shall be outlined in a Water Offset Plan that will be provided to the CPM for review and approval and which shall include the following at a minimum:</p> <p>A. Identification of the water offsets as determined in SOIL&amp;WATER-17;</p> <p>B. Demonstration of the Project owner's ability to conduct the activity;</p> <p>C. Whether any governmental approval of the identified offset will be needed, and if so, whether additional approval will require compliance with CEQA or NEPA;</p> <p>D. Demonstration of how much water is provided by each of the offset measures;</p> <p>E. An estimated schedule for completion of the activities;</p>	<p>The project Owner shall submit a Water Offset Plan to the CPM for review and approval thirty (30) days before the start of extraction of groundwater for construction or operation.</p> <p>The Project owner shall implement the activities reviewed and approved in the Water Offset Plan in accordance with the agreed upon schedule in the Water Offset Plan. If agreement with the CPM on identification or implementation of offset activities cannot be achieved the Project owner shall immediately halt construction or operation until the agreed upon activities can be identified and implemented.</p>	CEC

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>SOIL AND WATER (cont.)</b>		
<p>F. Performance measures that would be used to evaluate the amount of water replaced by the proposed offset measure; and,</p> <p>G. A Monitoring and Reporting Plan outlining the steps necessary and proposed frequency of reporting to show the activities are achieving the intended benefits of the water supply offsets;</p>		
<p><b>SOIL&amp;WATER-15, Groundwater Production Reporting:</b> The Project is subject to the requirement of Water Code Sections 4999 et. seq. for reporting of groundwater production in excess of 25 acre feet per year.</p>	<p>The project owner shall file an annual "Notice of Extraction and Diversion of Water" with the SWRCB in accordance with Water Code Sections 4999 et. seq. The project owner shall include a copy of the filing in the annual compliance report.</p>	CEC
<p><b>SOIL&amp;WATER 16, Groundwater Subsidence Monitoring and Action Plan:</b> One monument monitoring station per production well or a minimum of three stations shall be constructed to measure potential inelastic subsidence that may alter surface characteristics of the Chuckwalla Valley near the proposed production wells. The applicant shall:</p> <p>A. Prepare and submit a Subsidence Monitoring Plan (SMP). The plan shall include the following elements:</p> <ol style="list-style-type: none"> <li>1. Construction diagrams of the proposed monument monitoring station including size and description, planned depth, measuring points, and protection measures;</li> <li>2. Map depicting locations (minimum of three) of the planned monument monitoring stations;</li> <li>3. Monitoring program that includes monitoring frequency, thresholds of significance, reporting format.</li> </ol> <p>B. Prepare quarterly reports commencing three (3) months following commencement of groundwater production during construction and operations.</p> <ol style="list-style-type: none"> <li>1. The reports shall include presentation and interpretation of the data collected including comparison to the thresholds developed in Item C.</li> </ol> <p>C. Prepare a Mitigation Action Plan that details the following:</p> <ol style="list-style-type: none"> <li>1. Thresholds of significance for implementation of proposed action plan; <ol style="list-style-type: none"> <li>a. Any subsidence that may occur will not be allowed to damage existing structures either on or off the site or alter the appearance or use of the structure;</li> <li>b. Any subsidence that may occur will not be allowed to alter the natural drainage patterns or permit the formation of playas or lakes;</li> <li>c. Any subsidence that violates (a) or (b) will result in the project owner investigating the need to immediately reduce/cease pumping until the cause is identified or subsidence caused by project pumping abates and the structures and/or drainage patterns are stabilized and corrected.</li> </ol> </li> <li>2. Action Plan that details proposed actions by the applicant in the event thresholds are achieved during the monitoring program. The applicant shall submit the Ground Subsidence Monitoring and Action Plan that is prepared by an Engineering Geologist registered in the State of California 30 days prior to the start of extraction of groundwater for construction or operation.</li> </ol>	<p>The project owner shall do all of the following:</p> <ol style="list-style-type: none"> <li>1. At least 30 days prior to project construction, the project owner shall submit to the CPM, a comprehensive report presenting all the data and information required in item A above.</li> <li>2. The project owner shall submit to the CPM all calculations and assumptions made in development of the SMP.</li> <li>3. During Project construction and operations, the project owner shall submit to the CPM quarterly reports presenting all the data and information required in item B above.</li> <li>4. The project owner shall submit to the CPM all calculations and assumptions made in development of the report data and interpretations.</li> <li>5. After the first five years of the monitoring period, the project owner shall submit a 5-year monitoring report to the CPM that submits all monitoring data collected and provides a summary of the findings. The CPM will determine if the Ground Subsidence Monitoring and Action Plan frequencies should be revised or eliminated.</li> </ol>	CEC

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>SOIL AND WATER (cont.)</b>		
<p><b>SOIL&amp;WATER 17, Estimation of Surface Water Impacts:</b> To further assess the impacts from Project pumping, the Project owner shall estimate the increase in discharge from surface water to groundwater that affects recharge in the Palo Verde Valley Groundwater Basin (PVVGB)(USGS). This estimate may be used for determining the appropriate offset volume in accordance with <b>SOIL&amp;WATER-14</b>. The Project owner shall do the following to provide an estimate for review and approval by the CPM:</p> <ol style="list-style-type: none"> <li>1. The Project owner shall conduct a detailed analysis of the affect from Project pumping on at the end of the 30 year operational period the change in groundwater outflow from the Chuckwalla Valley Groundwater Basin to the Palo Verde Valley and how the change in outflow may affect recharge of surface water to the PVVGB from the Project's groundwater extraction activities. The detailed analysis shall include: <ol style="list-style-type: none"> <li>a. The conceptual model developed in the AFC and the Staff Assessment, for the Chuckwalla Valley Groundwater Basin and the Palo Verde Valley, and any changes resultant from further analysis in support of numerical modeling;</li> <li>b. The use of an appropriately constructed groundwater model 1.) for the eastern portion of the Chuckwalla Valley Groundwater Basin that describes the effect from Project pumping on the outflow of groundwater to the Palo Verde Valley, and 2.) an appropriately constructed groundwater model of the Palo Verde Valley, inclusive of the mesa and floodplain. The models shall be coupled as appropriate to determine the effect from Project pumping on the surface water recharge in the Palo Verde Valley. Each model shall be constructed in consideration of the following: <ol style="list-style-type: none"> <li>i. Horizontal and vertical geometry information gained through on- and offsite investigations conducted as part of the hydrogeological field investigations for the AFC, and any subsequently documented investigation performed as part of the model development ;</li> <li>ii. Aquifer properties developed as part of the AFC and any subsequently documented investigations performed as part of the model development, and an assessment of aquifer properties available from other published sources. The properties used shall be representative of the available data; and</li> <li>iii. The modeling effort shall include a sensitivity analysis where in the most sensitive variables will be identified and varied within a reasonable range outside of the calibration value to provide an assessment of the range of potential impacts from the Project pumping on the recharge from the Palo Verde Valley Groundwater Basin.</li> </ol> </li> <li>c. Reporting of the results of the modeling effort</li> <li>d. Estimation of the increased contribution of surface water discharge to groundwater and the change in recharge to the Palo Verde Valley Groundwater Basin attributable to Project groundwater pumping.</li> </ol> </li> <li>2. The analysis shall include the following elements: <ol style="list-style-type: none"> <li>a. The change in groundwater flux to the regional aquifer from surface water sources attributable to Project pumping in afy for the life of the Project (30 years) until pre-project (within 95%) conditions are achieved;</li> <li>b. A sensitivity analysis that would provide a range in the potential changes in flux relative to variation in the key model variables within each model as a result of Project pumping for life of the Project until pre-project (within 95%) conditions are achieved;</li> </ol> </li> <li>3. The project owner shall present the results of the conceptual model, numerical model, transient runs and sensitivity analysis in a report for review and approval by the CPM. The report shall include all pertinent information regarding the development of the numerical models. The report shall include as discussion of the following as appropriate to each model:</li> </ol>	<p>Within thirty (30) days following certification of the proposed Project, the project owner shall submit to the CPM for their review and approval a report detailing the results of the modeling effort. The report shall include the estimated amount of change in discharge from surface water to groundwater within the Palo Verde Valley due to Project pumping. This estimate shall be used for determining the appropriate volume of water for offset in accordance with <b>SOIL&amp;WATER-14</b>.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>SOIL AND WATER (cont.)</b>		
<ul style="list-style-type: none"> <li>a. Introduction</li> <li>b. Previous Investigations</li> <li>c. Conceptual Model</li> <li>d. Numerical Model and Input Parameters</li> <li>e. Sensitivity Analysis</li> <li>f. Transient Modeling Runs</li> <li>g. Conclusions</li> </ul>		
<p><b>SOIL&amp;WATER-18, Groundwater Quality Monitoring and Reporting Plan:</b> The project owner shall submit a Groundwater Quality Monitoring and Reporting Plan to the CPM for review and approval. The Groundwater Quality Monitoring and Reporting Plan shall provide a description of the methodology for monitoring background and site groundwater quality following the Waste Discharge Requirements of <b>SOIL&amp;WATER-6</b>, to assess the effects from pumping on changes in the aquifer water chemistry, and to monitor potential impacts from operation of proposed septic leach fields, if required. The initial background water quality sampling shall be implemented during the background groundwater level monitoring events in accordance with <b>SOIL&amp;WATER-4</b>. Prior to project construction, access to offsite wells shall be obtained and samples collected and monitoring wells shall be installed to evaluate background water quality in the shallow and deep regional aquifer in areas that will be affected by Project pumping. These data will be used to establish pre-construction water quality that can be quantitatively compared against data gathered during construction and operation to assess if project pumping or a release from the waste management units (See <b>SOIL&amp;WATER-6</b>), or septic systems (if required) has adversely affected the water supply or sensitive receptors.</p> <ol style="list-style-type: none"> <li>1. A Groundwater Quality Monitoring and Reporting Plan shall be submitted to the CPM 90 days prior to operation of the water supply wells for construction. The Plan shall include a scaled map showing the site and vicinity, existing well locations, and proposed monitoring locations (both existing wells and new monitoring wells proposed for construction). Additional monitoring wells that shall be installed include wells required in accordance with Condition of Certification <b>SOIL&amp;WATER-6</b>, for the evaporation ponds and land treatment unit proposed for the project, and if required for the sanitary leachfield system. The map shall also include relevant natural and man-made features (existing and proposed as part of this project). The plan also shall provide: (1) well construction information and borehole lithology for each existing well proposed for use as a monitoring well; (2) description of proposed drilling and well installation methods; (3) proposed monitoring well design; and, (4) schedule for completion of the work.</li> <li>2. A Well Monitoring Installation and Groundwater Quality Network Report shall be submitted to the CPM for review and approval in conjunction with Condition of Certification <b>SOIL&amp;WATER-4</b> and 60 days prior to operation of the water supply wells. The report shall include a scaled map showing the final monitoring well network. It shall document the drilling methods employed, provide individual well construction as-builds, borehole lithology recorded from the drill cuttings, well development, and well survey results. The well survey shall measure the location and elevation of the top of the well casing and reference point for all water level measurements, and shall include the coordinate system and datum for the survey measurements. Additionally, the report shall describe the water level monitoring equipment employed in the wells and document their deployment and use.</li> <li>3. As part of the monitoring well network development, all newly constructed monitoring wells shall be constructed consistent with State and Riverside County specifications.</li> </ol>	<p>The project owner shall complete the following:</p> <p>At least 90 days prior to construction, a Groundwater Level and Quality Monitoring and Reporting Plan shall be submitted to the CPM for review and approval.</p> <p>At least 60 days prior to construction, a Well Monitoring Installation and Groundwater Level Network Report shall be submitted to the CPM for review and approval.</p> <p>At least 60 days prior to use of any groundwater for construction, all groundwater quality and groundwater level monitoring data shall be reported to the CPM. On a semiannual basis water quality data shall be collected during construction and 5 years following initial operation. The results of the monitoring will be reported on a semiannual basis, one month following the end of the 1st and 3rd quarters.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>SOIL AND WATER (cont.)</b>		
<p>4. Prior to use of any groundwater for construction, all groundwater quality and groundwater level monitoring data shall be reported to the CPM in the Well Monitoring Installation and Groundwater Quality Network Report that is due in conjunction with the background water level monitoring report under <b>SOIL&amp;WATER-4</b> and 60 days prior to construction. The report shall include the following:</p> <ul style="list-style-type: none"> <li>a. An assessment of pre-project groundwater levels, a summary of available climatic information (monthly average temperature and rainfall records from the nearest weather station), and a comparison and assessment of water level data relative to the assumptions and spatial trends simulated by the applicant's groundwater model.</li> <li>b. An assessment of pre-project groundwater quality with groundwater samples analyzed for those constituents required under the Waste Discharge Requirements (Appendix B, C and D) and if not included total dissolved solids (TDS), chloride, nitrates, major cations and anions, oxygen-18 and deuterium isotopes, and soluble metals.</li> <li>c. The data shall be tabulated and include the estimated range (minimum and maximum values), average, and median for each constituent analyzed. If a sufficient number of data points are available from the background sampling, the data shall also be analyzed using the Mann-Kendall test for trend at 90% confidence to assess whether pre-project water quality trends, if any, are statistically significant.</li> </ul> <p>5. During project construction and during the first five years of project operations, the project owner shall semi-annually monitor the quality of groundwater and changes in groundwater elevation and submit data semiannually to the CPM one month following the end of the 1st and 3rd quarter and following the operation reporting requirement under <b>SOIL&amp;WATER-4</b>. After five years of project operations, the frequency and scope of the monitoring program shall be reassessed by the CPM. The semi-annual report shall document water level monitoring methods, the water level data, water level plots, and a comparison between pre- and post-project start-up water level trends as itemized below. The report shall also include a summary of actual water use conditions, monthly climatic information (temperature and rainfall) from the nearest meteorological monitoring station, and a comparison and assessment of water level data relative to the assumptions and simulated spatial trends predicted by the applicant's groundwater model.</p> <ul style="list-style-type: none"> <li>a. Groundwater samples from all wells in the monitoring well network shall be analyzed and reported semi-annually for those constituents required in the Waste Discharge Requirements (Appendix B, C and D) and if not included TDS, chloride, nitrates, cations and anions, oxygen-18 and deuterium isotopes.</li> <li>b. For analysis purposes, pre-project water quality shall be defined by samples collected prior to project construction as specified above, and compliance data shall be defined by samples collected after the construction start date to determine the effects from Project pumping and after the installation and operation of the waste management units in compliance with the Waste Discharge Requirements (Appendix B, C and D) and the sanitary leachfields, if required.</li> <li>c. Trends in water quality data shall be analyzed using the Mann- Kendall test for trend at the 90% confidence. Trends in the compliance data shall be compared and contrasted to pre-project trends, if any.</li> <li>d. The contrast between pre-project and compliance mean or median concentrations shall be compared using an Analysis of Variance (ANOVA) or other appropriate statistical method approved by the CRBRWQCB for evaluation of water quality impacts. A parametric ANOVA (for example, an F-test) can be conducted on the two data sets if the residuals between observed and expected values are normally distributed and have equal variance, or the data can be transformed to an approximately normal distribution. If the data cannot be represented by a normal distribution, then a nonparametric ANOVA shall be conducted (for example, the Kruskal-Wallis test). If a statistically significant</li> </ul>		

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>SOIL AND WATER (cont.)</b>		
<p>difference is identified at 90% confidence between the two data sets, the monitoring data are inconsistent with random differences between the pre-project and baseline data indicating a significant water quality impact from project pumping may be occurring.</p> <p>e. If compliance data to evaluate the effects from Project pumping or potential impacts from operation of sanitary leachfield indicate that the water supply quality has deteriorated in (exceeds pre-project constituent concentrations in TDS, sodium, chloride, or other constituents identified as part of the monitoring plan and applicable Water Quality Objectives are exceeded for the applicable beneficial uses of the water supply) adjacent water supply wells that can be shown to be adversely influenced by Project Pumping for three consecutive years, the Project owner shall provide well-head treatment or a new water supply to either meet or exceed pre-project water quality conditions to any impacted water supply wells.</p>		
<p><b>SOIL&amp;WATER-19, Non-Transient, Non-Community Water System:</b> The Project is subject to the requirement of Title 22, Article 3, Sections 64400.80 through 64445 for a non-transient, non-community water system (serving 25 people or more for more than six months). In addition, the system shall require periodic monitoring for various bacteriological, inorganic and organic constituents.</p>	<p>The project owner shall submit the equivalent County of Riverside requirements to operate a non-transient, non-community water system with the County of Riverside at least 60 days prior to commencement of operations at the site. In addition, the project owner shall submit to the CPM a monitoring and reporting plan for production wells operated as part of the domestic water supply system prior to plant operations. The plan shall include reporting requirements including monthly, quarterly and annual submissions. The project owner shall designate a California Certified Water Treatment Plant Operator as well as the technical, managerial and financial requirements as prescribed by State law. The project owner shall supply updates on an annual basis of monitoring requirements, any required submittals equivalent to the County of Riverside requirements including annual renewal requirements.</p>	CEC
<b>SPECIAL DESIGNATIONS</b>		
<p><b>MM-SD-01:</b> The NPS shall be afforded the opportunity to review and comment on the following pre-construction plans required for the project prior to approval of the plans by the BLM and CPUC: the Weed Management Plan (BIO-14), Dust Control Plans (AQ-SC-3 and AQ-SC-7), and Construction Traffic Control Plan (TRANS-4). Review and comment by the NPS must be within time frames specified by the BLM.</p>	<p>The project owner shall submit the identified plans to NPS for a 30-day review and comment period before BLM may approve the plans. The project owner shall provide a copy of the transmittal to NPS of the plans (with or without attachments) to BLM for verification.</p>	BLM
<p><b>MM-SD-02:</b> The Applicant shall enter into a funding agreement or other financial mechanism, as may be specified in the ROD or ROW grant, to reimburse the NPS for reasonable costs incurred in the monitoring of the following measures (whether applicant proposed or BLM-recommended) to address temporary indirect impacts on the Joshua Tree National Park:</p>	<p>The project owner shall submit proof that a funding agreement or other financial mechanism has been entered into by and between the project owner and the NPS before the BLM will issue an NTP for the commencement of construction activities at the site.</p>	BLM



## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>SPECIAL DESIGNATIONS (cont.)</b>		
<ol style="list-style-type: none"> <li>1. Fugitive dust: AQ-SC-3 and AQ-SC-7, requiring the development and implementation of dust control plans during construction and operations, and SOIL&amp;WATER-1(H), requiring the development and implementation of measures designed to prevent wind and water erosion including application of chemical dust palliatives after rough grading to limit water use.</li> <li>2. Noise: NOISE-6, limiting most construction activity to daytime hours.</li> <li>3. Nighttime lighting: VIS-3, requiring the design and installation of a lighting mitigation plan concerning temporary and permanent exterior lighting.</li> </ol>		
<p><b>MM-SD-03:</b> A Signage and Guidance Plan shall be developed for JTNP by the Applicant and reviewed and approved by both the NPS and the BLM prior to the start of construction of the project. The intent of this plan is to address the potential indirect effects on NPS land as a result of the influx of workers associated with the mobilization, construction, and demobilization of the project. The plan shall include the following elements:</p> <ol style="list-style-type: none"> <li>1. Design and installation of directional and informational signage that identify areas of JTNP available for day, overnight, and long-term stays; off-limit areas; and pertinent park rules and regulations;</li> <li>2. Design and installation of strategically placed gates, bollards, or the like, inside the boundary of JTNP, where deemed necessary, for the purpose of vehicular control on NPS parkland located nearest the project boundary;</li> <li>3. Educational instruction for project construction workers on park rules and regulations pertinent to JTNP and Joshua Tree Wilderness Area. This instruction shall be integrated into the Worker Environmental Awareness Program;</li> <li>4. Requirements for the retention and/or removal of any items installed as part of the plan following completion of construction of the project; and,</li> <li>5. Funding mechanism for implementing the plan.</li> </ol> <p>Items installed as part of the plan shall have a nexus to the NPS's need to address the likely impacts associated with above normal numbers of users of JTNP facilities during the mobilization, construction, and demobilization period of the project.</p>	<p>The project owner shall submit to BLM the Signage and Guidance Plan and proof of NPS's approval of it before the BLM will issue an NTP for the commencement of construction activities at the site.</p>	BLM
<b>TRAFFIC AND TRANSPORTATION</b>		
<p><b>TRANS-1, Regulation Compliance:</b> The project owner shall comply with limitations imposed by Caltrans District 8 and other relevant jurisdictions, including the County of Riverside, on vehicle sizes and weights and driver licensing. In addition, the project owner or its contractor shall obtain necessary transportation permits from Caltrans and all relevant jurisdictions for roadway use.</p>	<p>In the Monthly Compliance Reports (MCRs), the project owner shall report permits received during that reporting period. In addition, the project owner shall retain copies of permits and supporting documentation on-site for Compliance Project Manager (CPM) inspection if requested.</p>	CEC
<p><b>TRANS-2, Transport of Hazardous Materials:</b> The project owner shall ensure that permits and/or licenses are secured from the California Highway Patrol and Caltrans for the transport of hazardous materials.</p>	<p>In the MCRs, the project owner shall report permits and/or licenses for hazardous substance transportation received during that reporting period. In addition, the project owner shall retain copies of permits, licenses, and supporting documentation on-site for CPM inspection if requested.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>TRAFFIC AND TRANSPORTATION (cont.)</b>		
<p><b>TRANS-3, Repair and Restoration of Roads:</b> The project owner shall restore all public roads, easements, and rights-of-way that have been damaged due to project-related construction activities to original or near-original condition in a timely manner, as directed by BLM's Authorized Officer and the CPM. Repair and restoration of access roads may be required at any time during the construction phase of the project to assure safe ingress and egress.</p>	<p>At least 30 days prior to the start of mobilization, the project owner shall photograph or videotape all affected public roads, easements, and right-of-way segments and/or intersections and shall provide the CPM and the affected local jurisdictions and Caltrans (if applicable) with a copy of these images. The project owner shall rebuild, repair and maintain all public roads, easements, and rights-of-way in a usable condition throughout the construction phase of the project.</p> <p>At least 30 days prior to the start of site mobilization, the project owner shall consult with the County of Riverside and Caltrans District 8 and notify them of the proposed schedule for project construction. The purpose of this notification is to request that the County of Riverside and Caltrans consider postponement of public right-of-way repair or improvement activities in areas affected by project construction until construction is completed and to coordinate with the project owner regarding any concurrent construction-related activities that are planned or in progress and cannot be postponed.</p> <p>Within 60 calendar days after completion of construction, the project owner shall meet with the CPM, the County of Riverside, and Caltrans District 8 to identify sections of public right-of-way to be repaired. At that time, the project owner shall establish a schedule to complete the repairs and to receive approval for the action(s). Following completion of any public right-of-way repairs, the project owner shall provide to the CPM a letter signed by the County of Riverside and Caltrans District 8 stating their satisfaction with the repairs.</p>	
<p><b>TRANS-4, Traffic Control Plan (TCP):</b> Prior to the start of construction of the PSPP, the project owner shall prepare and implement a Traffic Control Plan (TCP) for the PSPP's construction and operations traffic. The TCP shall address the movement of workers, vehicles, and materials, including arrival and departure schedules and designated workforce and delivery routes. The project owner shall consult with the County of Riverside and the California Department of Transportation (Caltrans) District 8 office in the preparation and implementation of the Traffic Control Plan (TCP). The project owner shall submit the proposed TCP to the County of Riverside and the Caltrans District 8 office in sufficient time for review and comment, and to the Energy Commission Compliance Project Manager (CPM) for review and approval prior to the proposed start of construction and implementation of the plan. The CPM shall review and approve the TCP or identify any material deficiencies within thirty (30) days of receipt. The project owner shall provide a copy of any written</p>	<p>At least 60 calendar days prior to the start of construction, including any grading or site remediation on the power plant site or its associated easements, the project owner shall submit the proposed TCP to the County of Riverside and the Caltrans District 8 office for review and comment and to the CPM for review and approval. The project owner shall also provide the CPM with a copy of the transmittal letter to the County of Riverside and the Caltrans District 8 office requesting review and comment.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>TRAFFIC AND TRANSPORTATION (cont.)</b>		
<p>comments from the County of Riverside and the Caltrans District 8 office and any changes to the TCP to the CPM prior to the proposed start of construction. The Traffic Control Plan (TCP) shall include:</p> <ol style="list-style-type: none"> <li>1. A work schedule and end-of-shift departure plan designed to ensure that stacking does not occur at intersections necessary to enter and exit the project sites. The project owner shall consider using one or more of the following measures designed to prevent stacking: staggered work shifts, off-peak work schedules, and/or restricting travel to and departures from each project site to 10 or fewer vehicles every three minutes during peak travel hours on I- 10.</li> <li>2. Provisions for an incentive program, such as employer-sponsored commuter checks, to encourage construction workers to carpool and/or use van or bus service.</li> <li>3. Limitation of truck deliveries at the project site to only off-peak hours.</li> <li>4. A heavy-haul plan addressing the transport and delivery of heavy and oversized loads requiring permits from the California Department of Transportation (Caltrans) or other state or federal agencies.</li> <li>5. Timing of heavy equipment and building material delivery to the sites</li> <li>6. Parking for workforce and construction vehicles.</li> <li>7. Emergency vehicle access to the project site.</li> <li>8. Provisions for redirection of construction traffic with a flag person as necessary to ensure traffic safety and minimize interruptions to non-construction related traffic flow.</li> <li>9. Placement of signage, lighting, and traffic control devices at the project construction site and laydown areas.</li> <li>10. Placement of signage along northbound Corn Springs Road and at the entrance of each of the I-10 westbound and eastbound offramps at Corn Springs Road notifying drivers of construction traffic throughout the duration of the construction period.</li> <li>11. Placement of signage to redirect traffic from Corn Springs Road during construction activities related to roadway realignments and pipeline installation in and across the Corn Springs Road right-of-way</li> <li>12. Temporary closing of travel lanes, if necessary.</li> <li>13. Access to adjacent residential and commercial property during the construction of all linears</li> </ol>		
<p><b>TRANS-5, Encroachment Permits:</b> The project owner or contractor shall comply with Caltrans' and other relevant jurisdictions' limitations for encroachment into public rights-of-way and shall obtain necessary encroachment permits from Caltrans and any other relevant jurisdictions.</p>	<p>In the MCRs, the project owner shall report permits received during that reporting period. In addition, for at least six months after the start of commercial operation, the project owner shall retain copies of permits and supporting documentation on-site for CPM inspection if requested.</p>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>TRAFFIC AND TRANSPORTATION (cont.)</b>		
<p><b>TRANS-6, Heliostat Positioning Plan:</b> The project owner shall prepare and implement a Heliostat Positioning Plan that would minimize potential for human health and safety hazards and bird injury or mortality from solar radiation exposure. The Heliostat Positioning Plan shall accomplish the following:</p> <ol style="list-style-type: none"> <li>1) Identify the heliostat movements and positions (including reasonably possible malfunctions) that could result in potential exposure of observers at various locations including in aircraft, motorists, pedestrians and hikers in nearby wilderness areas to reflected solar radiation from heliostats;</li> <li>2) Assess the effects of the potential glint and glare associated with the proposed heliostat positions and movements determined through Item 1. The assessment shall quantify the potential glint and glare effects and determine public health, safety, and visual impacts at KOPs identified in the PSEGS Draft SEIS. In addition, the analysis shall identify the maximum project-related glint and glare that could be experienced by motorists along I-10. The assessment shall be conducted by qualified individuals using appropriate and commonly accepted software and procedures. The assessment results must be made available to the BLM in advance of project approval. If the project design is changed during the siting and design process such that substantial changes to glint and glare effects may occur, glint and glare effects shall be recalculated, and the results shall be made available to BLM;</li> <li>3) Describe within the HPP how programmed heliostat operation would address potential human health and safety hazards at locations of observers, and would limit or avoid potential for harm to birds;</li> <li>4) Prepare a monitoring plan that would: a) obtain field measurements in candela per meters squared and watts per meter squared to validate that the Heliostat Positioning Plan would avoid potential for human health and safety hazards consistent with the methodologies detailed in the 2010 Sandia Lab document presented by Clifford Ho, et al<sup>1</sup>, including those referenced studies and materials within related to ocular damage, and b) provide requirements and procedures to document, investigate and resolve legitimate human health and safety hazard complaints prioritizing localized response (e.g., screening at location of complaint) regarding daytime intrusive light.</li> <li>5) The monitoring plan should be made available to interested parties including CalTrans, CHP, FAA, and the Department of Defense (DOD) Southwest Renewable Energy Work Group and be updated on an annual basis for the first 5 years, and at 2-year intervals thereafter for the life of the project.</li> </ol>	<p>Within 90 days before commercial operation, the project owner shall submit a Heliostat Positioning Plan (HPP) to the CPM for review and approval. The project owner shall also submit the plan to potentially interested parties that may include CalTrans, CHP, FAA, and the Department of Defense (DOD) Southwest Renewable Energy Work Group for review and comment and forward any comments received to the CPM.</p>	
<p><b>TRANS-7, Power Tower Luminance Monitoring Plan:</b> The project owner shall prepare a Power Tower LMVR Plan to provide procedures to conduct measurements and to document complaints regarding distraction effects to aviation, vehicular and pedestrian traffic associated with the PSEGS solar receiver tower. The Power Tower LMVR Plan shall include provisions for the following:</p> <ol style="list-style-type: none"> <li>1) Provide measurement data within 30 days to potentially interested parties that may include CalTrans, CHP, FAA, and the Department of Defense (DOD) Southwest Renewable Energy Work Group for review and comment, and to the CPM for review and approval.</li> <li>2) Measurement of luminance at the locations where any distraction effects have been reported and at the locations nearest the solar receiver tower from the four sides of the power plant boundary, and the nearest public road, which may be substituted for one of the sides of the solar receiver tower during the time of day when values would be highest;</li> <li>3) Measurement of luminance using an illuminance meter, photometer, or similar device and reporting of data in photometric units (candelas per meter squared and watts per meter squared); the measurements are intended to</li> </ol>	<p>No later than 60 days prior to RSEP commercial operation, the project owner shall provide a Power Tower LMVR Plan applicable to PSEGS for review and approval by the CPM. The plan shall specify procedures to document and investigate complaints regarding intrusive light, and report these to the CPM within 10 days of receiving a complaint.</p> <p>The project owner shall measure the intensity of the luminance of light in candelas per meter squared and watts per meter squared reflected from the solar receiver tower according to the following:</p> <p>A. Within 90 days following commercial operation;</p>	

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>TRAFFIC AND TRANSPORTATION (cont.)</b>		
<p>provide a relative and quantifiable measure of luminance that can be associated with any observed and reported distraction effect from the solar receiver tower.</p> <p>4) Provisions for documenting reported distraction and if the solar receiver tower is identified as a safety concern; the project owner shall consider reasonable localized mitigation measures that are technically and financially feasible. The localized mitigation measures may include signage for or screening of the affected area or other reasonable measures.</p> <p>5) Post-mitigation verification; Within 30 days following the implementation of mitigation measures designed to reduce localized impact of the solar receiver tower, the project owner shall repeat the luminance measurements to demonstrate the effectiveness of mitigation measures and provide the new measurement data for review and comment by interested parties that may include CalTrans, CHP, FAA, and the Department of Defense (DOD) Southwest Renewable Energy Work Group, and for review and approval by the CPM.</p>	<p>B. If a major design change is implemented that results in an increase of the reflective luminance of the PSEGS solar receiver tower; and</p> <p>C. After receiving a complaint regarding a distraction associated with the central solar receiver from a location where previous measurements were not taken.</p>	
<p><b>TRANS-8, Solar Receiver Tower Obstruction Marking and Lighting:</b> The project owner shall install obstruction marking and lighting on the solar receiving tower, consistent with both the FAA and DOD requirements, as expressed in the following documents:</p> <ul style="list-style-type: none"> <li>• FAA Advisory Circular 70/7460-1K, Change 2: Obstruction Marking and Lighting, 24-hour medium-strobes;</li> <li>• Air Force Aviation Safety: Flight Safety Flash 09-01; and</li> <li>• FAA Safety Alert for Operators (SAFO) 09007.</li> </ul> <p>Temporary lighting shall be installed on the top of the structure once the construction height has exceeded 200 feet AGL, activated within five days of installation, and maintained in operation 24 hours a day, 7 days a week until construction is complete. Permanent lighting consistent with all requirements shall be installed and activated within five days of completion of construction. Lighting shall be operational 24 hours a day, 7 days a week, for the life of the project and until such time as the tower no longer exists at a height exceeding 200 feet AGL. Upgrades to the required lighting configurations, types, location, or duration shall be implemented consistent with any changes to FAA or DOD obstruction marking and lighting requirements.</p>	<p>At least 60 days prior to the start of construction, the project owner shall submit final design plans for the power plant solar receiving tower that depict the required air traffic obstruction marking and lighting to the CPM for approval.</p> <p>Within five days of completion of the solar receiving tower to a height exceeding 200 feet AGL, the project owner shall install and activate temporary obstruction marking and lighting at the top of the structure and shall maintain temporary lighting at the top of said structure until construction of the tower is complete. The project owner shall inform the CPM in writing within 10 days of the time the lighting is first installed and activated.</p> <p>Within five days of completion of the tower construction, the project owner shall install and activate permanent obstruction marking and lighting consistent with both FAA and DOD requirements and shall inform the CPM in writing within 10 days of installation and activation. The lighting shall be inspected and approved by the CPM (or designate inspector) within 30 days of activation.</p>	
<b>TRANSMISSION LINE SAFETY AND NUISANCE</b>		
<p><b>TLSN-1, EMF Reduction Guidelines:</b> The project owner shall construct the proposed transmission line (anywhere along the area identified by the applicant as available for its routing) according to the requirements of (a) California Public Utility Commission's GO-95, GO-52, GO-131-D, Title 8, and Group 2, (b) the High Voltage Electrical Safety Orders, sections 2700 through 2974 of the California Code of Regulations, and (3) Southern California Edison's EMF reduction guidelines.</p>	<p>At least 30 days before starting the transmission line or related structures and facilities, the project owner shall submit to the Compliance Project Manager (CPM) a letter signed by a California registered electrical engineer affirming that the lines will be constructed according to the requirements stated in the condition.</p>	CEC

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>TRANSMISSION LINE SAFETY AND NUISANCE (cont.)</b>		
<b>TLSN-2, Measurements of Electric and Magnetic Fields:</b> The project owner shall use a qualified individual to measure the strengths of the electric and magnetic fields from the line at the points of maximum intensity along the route for which the applicant provided specific estimates. The measurements shall be made before and after energization according to the American National Standard Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) standard procedures. These measurements shall be completed no later than 6 months after the start of operations.	The project owner shall file copies of the pre-and post-energization measurements with the CPM within 60 days after completion of the measurements.	CEC
<b>TLSN-3, Transmission Line Distance from Combustible Material:</b> The project owner shall ensure that the rights-of-way of the proposed transmission line are kept free of combustible material, as required under the provisions of section 4292 of the Public Resources Code and section 1250 of Title 14 of the California Code of Regulations.	During the first five years of plant operation, the project owner shall provide a summary of inspection results and any fire prevention activities carried out along the right-of-way and provide such summaries in the Annual Compliance Report on transmission line safety and nuisance-related requirements.	CEC
<b>TLSN-4, Grounding Permanent Metallic Objects:</b> The project owner shall ensure that all permanent metallic objects within the right-of-way of the project-related lines are grounded according to industry standards regardless of ownership.	At least 30 days before the lines are energized, the project owner shall transmit to the CPM a letter confirming compliance with this condition.	CEC
<b>VISUAL RESOURCES</b>		
<p><b>VIS-1, Surface Treatment of Project Structures and Buildings:</b> The project owner shall treat the surfaces of all project structures and buildings visible to the public such that a) their colors minimize visual intrusion and contrast by blending with (matching) the existing characteristic landscape colors; b) their colors and finishes do not create excessive glare; and c) their colors and finishes are consistent with local policies and ordinances. The transmission line conductors shall be non-specular and non-reflective, and the insulators shall be non-reflective and non-refractive. Grouped structures shall be painted the same color to reduce visual complexity and color contrast.</p> <p>Following in-field consultation with the Energy Commission/BLM Visual Resources specialist and other representatives as deemed necessary, the project owner shall submit for Compliance Project Manager (CPM) review and approval, a specific Surface Treatment Plan that will satisfy these requirements. The treatment plan shall include:</p> <p>A. A description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finishes based on the characteristic landscape. Colors will be fielded tested using the actual distances from the KOPs to the proposed structures, using the proposed colors painted on representative surfaces;</p> <p>B. A list of each major project structure, building, tank, pipe, and wall; the transmission line towers and/or poles; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and pantone number; or according to a universal designation system;</p> <p>C. One set of color brochures or color chips showing each proposed color and finish;</p> <p>D. A specific schedule for completion of the treatment; and</p>	<p>At least 90 days prior to specifying to the vendor the colors and finishes of the first structures or buildings that are surface treated during manufacture, the project owner shall submit the proposed treatment plan to BLM's Authorized Officer and the CPM for review and approval and simultaneously to Riverside County for review and comment. If BLM's Authorized Officer and the CPM determine that the plan requires revision, the project owner shall provide to BLM's Authorized Officer and the CPM a plan with the specified revision(s) for review and approval by BLM's Authorized Officer and the CPM before any treatment is applied. Any modifications to the treatment plan must be submitted to BLM's Authorized Officer and the CPM for review and approval.</p> <p>Prior to the start of commercial operation, the project owner shall notify BLM's Authorized Officer and the CPM that surface treatment of all listed structures and buildings has been completed and they are ready for inspection and shall submit to each one set of electronic color photographs from the same key observation points identified in (d) above. The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report.</p>	CEC

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>VISUAL RESOURCES (cont.)</b>		
<p>E. A procedure to ensure proper treatment maintenance for the life of the project.</p> <p>The project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated in the field, until the project owner receives notification of approval of the treatment plan by BLM's Authorized Officer and the CPM. Subsequent modifications to the treatment plan are prohibited without BLM's Authorized Officer and CPM approval.</p>	<p>The report shall specify a): the condition of the surfaces of all structures and buildings at the end of the reporting year; b) maintenance activities that occurred during the reporting year; and c) the schedule of maintenance activities for the next year.</p>	
<p><b>VIS-2, Revegetation of Disturbed Soil Areas:</b> The project owner shall revegetate disturbed soil areas to the greatest practical extent, as described in Condition of Certification BIO 8. In order to address specifically visual concerns, the required Closure, Revegetation and Rehabilitation Plan shall include reclamation of the area of disturbed soils used for laydown, project construction, and siting of the substation and other ancillary operation and support structures.</p>	<p>Refer to Condition of Certification BIO 8.</p>	<p>CEC</p>
<p><b>VIS-3, Temporary and Permanent Exterior Lighting:</b> In addition to measures identified in VIS-6, and to the extent feasible, consistent with safety and security considerations, the project owner shall design and install all permanent exterior lighting and all temporary construction lighting such that a) lamps and reflectors are not visible from beyond the project site, including any off-site security buffer areas; b) lighting does not cause excessive reflected glare; c) direct lighting does not illuminate the nighttime sky, except for required FAA aircraft safety lighting (which should be an on-demand, visual warning system that is triggered by radar technology if allowed by FAA regulations and if the cost is no more than \$1 million for both towers); d) illumination of the project and its immediate vicinity is minimized, and e) the plan complies federal and state OSHA and with local policies and ordinances. The project owner shall submit to BLM's Authorized Officer and the CPM for review and approval, and simultaneously to the County of Riverside and NPS Joshua Tree NP (see VIS-6) for review and comment a lighting mitigation plan that includes the following:</p> <p>A. Location and direction of light fixtures shall take the lighting mitigation requirements into account;</p> <p>B. Lighting design shall consider setbacks of project features from the site boundary to aid in satisfying the lighting mitigation requirements;</p> <p>C. Lighting shall incorporate fixture hoods/shielding, with light directed downward or toward the area to be illuminated;</p> <p>D. Light fixtures that are visible from beyond the project boundary shall have cutoff angles that are sufficient to prevent lamps and reflectors from being visible beyond the project boundary, except where necessary for security;</p> <p>E. All lighting shall be of minimum necessary brightness consistent with operational safety and security; and</p> <p>F. Lights in high illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have (in addition to hoods) switches, timer switches, or motion detectors so that the lights operate only when the area is occupied.</p>	<p>At least 90 days prior to ordering any permanent exterior lighting or temporary construction lighting, the project owner shall contact BLM's Authorized Officer the CPM, and NPS Joshua Tree NP to discuss the documentation required in the lighting mitigation plan. At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to BLM's Authorized Officer and, the CPM for review and approval and simultaneously to the County of Riverside and NPS Joshua Tree NP for review and comment a lighting mitigation plan. If BLM's Authorized Officer and the CPM determine that the plan requires revision, the project owner shall provide to BLM's Authorized Officer and the CPM a revised plan for review and approval by BLM's Authorized Officer and the CPM.</p> <p>The project owner shall not order any exterior lighting until receiving BLM Authorized Officer and CPM approval of the lighting mitigation plan.</p> <p>Prior to commercial operation, the project owner shall notify BLM's Authorized Officer and the CPM that the lighting has been completed and is ready for inspection. If after inspection, BLM's Authorized Officer and the CPM notify the project owner that modifications to the lighting are needed, within 30 days of receiving that notification the project owner shall implement the modifications and notify BLM's Authorized Officer and the CPM that the modifications have been completed and are ready for inspection.</p> <p>Within 48 hours of receiving a lighting complaint, the project owner shall provide BLM's Authorized Officer and the CPM with a complaint resolution form report as specified in the Compliance General Conditions including a proposal to</p>	<p>CEC</p>

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>VISUAL RESOURCES (cont.)</b>		
	resolve the complaint, and a schedule for implementation. The project owner shall notify BLM's Authorized Officer and the CPM within 48 hours after completing implementation of the proposal. A copy of the complaint resolution form report shall be submitted to BLM's Authorized Officer and the CPM within 30 days.	
<p><b>VIS-4, Project Design:</b> To the extent possible, the project owner will use proper design fundamentals to reduce the visual contrast to the characteristic landscape. These include proper siting and location; reduction of visibility; repetition of form, line, color (see VIS 1) and texture of the landscape; and reduction of unnecessary disturbance. Design strategies to address these fundamentals will be based on the following factors:</p> <p>Earthwork: Select locations and alignments that fit into the landforms to minimize the size of cuts and fills. Avoid hauling in or hauling out of excess earth cut or fill. Avoid rounding and/or warping slopes. Retain existing rock formations, vegetation, and drainage. Tone down freshly broken rock faces with emulsions or stains. Use retaining walls to reduce the amount and extent of earthwork. Retain existing vegetation by using retaining walls or fill slopes, reducing surface disturbance, and protecting roots from damage during excavations. Avoid soil types that generate strong color contrasts. Reduce dumping or sloughing of excess earth and rock on downhill slopes.</p> <p>Vegetation Manipulation: Retain as much of the existing vegetation as possible. Use existing vegetation to screen the development from public viewing. Use scalloped, irregular cleared edges to reduce line contrast as determined in VIS-1. Use irregular clearing shapes to reduce form contrast. Feather and thin the edges of cleared areas and retain a representative mix of plant species and sizes.</p> <p>Structures: Minimize the number of structures and combine different activities in one structure. Use natural, self-weathering materials and chemical treatments on surfaces to reduce color contrast. Bury all or part of the structure. Use natural appearing forms to complement the characteristic landscape. Screen the structure from view by using natural land forms and vegetation. Reduce the line contrast created by straight edges.</p> <p>Signs: The use of signs and project construction signs shall be minimized. Necessary signs shall be made of nonglare materials and utilize unobtrusive colors. The reverse sides of signs and mounts shall be painted or coated by using the most suitable color selected from the BLM Standard Environmental Color Chart to reduce color contrasts with the existing landscape; however, placements and design of any signs required by safety regulations must conform to regulatory requirements.</p> <p>Linear Alignments: Use existing topography to hide induced changes associated with roads, lines, and other linear features. Select alignments that follow landscape contours. Avoid fall-line cuts and bisecting ridge tops. Hug vegetation lines and avoid open areas such as valley bottoms. Cross highway corridors and less sharp angles. The visual color contrast of graveled surfaces shall be reduced with approved color treatment practices.</p> <p>Construction: No paint or permanent discoloring agents shall be applied to rocks or vegetation to indicate surveyor construction activity limits. All stakes and flagging shall be removed from the construction area upon completion of construction and disposed of in an approved facility.</p> <p>Reclamation and Restoration: Reduce the amount of disturbed area and blend the disturbed areas into the characteristic landscape. Replace soil, brush, rocks, and natural debris over disturbed area. Newly introduce plant species should be of a form, color, and texture that blends with the landscape.</p>	<p>As early as possible in the site and facility design, the project owner shall meet with the CPM to discuss incorporation of these above factors into the design plans. At least 90 days prior to final site and facility design, the project owner shall contact the CPM to review the incorporation of the above factors into the final facility and site design plans. If the CPM determines that the site and facility plans require revision, the project owner shall provide to the CPM a revised plan for review and approval by the CPM.</p>	CEC



### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>VISUAL RESOURCES (cont.)</b>		
<b>VIS-5 (Previously Identified as BLM-VIS-1), Power Block and Power Tower Appearance:</b> In addition to the measures identified in VIS-1, the project owner shall paint power blocks structures and other vertical construction shadow gray as shown on the BLM Color Chart. The solar tower can be left untreated concrete. The backs of heliostat mirrors shall also be designed to minimize reflectivity.	Refer to VIS-1.	CEC
<p><b>VIS-6 (Previously Identified as BLM-VIS-2), Consultation with NPS Night Sky Program Manager:</b> In addition to the measures identified in VIS-3, the project owner shall consult with the National Park Service Night Sky Program Manager in the development of the lighting plan, and comply with stricter standards for light intensity. Any such lighting plan shall not conflict with federal requirements for lighting. All permanent light sources shall be below 3,500 Kelvin color temperature (warm white) and shall have cutoff angles not to exceed 45 degrees of nadir. All lights, temporary and permanent, are to be fully shielded such that the emission of light above the horizontal will be prevented. Prior to construction, the Applicant and SCE shall submit to the BLM, CPUC, and NPS Joshua Tree NP for review and approval a Lighting Mitigation Plan that includes the following:</p> <ol style="list-style-type: none"> <li>1. Specification that LPS or amber LED lighting will be emphasized, and that white lighting (metal halide) would (a) only be used when necessitated by specific work tasks, (b) not be used for dusk-to-dawn lighting, and (c) would be less than 3500 Kelvin color temperature;</li> <li>2. Specification and map of all lamp locations, orientations, and intensities, including security, roadway, and task lighting;</li> <li>3. Specification of each light fixture and each light shield;</li> <li>4. Total estimated outdoor lighting footprint, expressed as lumens or lumens per acre;</li> <li>5. Definition of the threshold for substantial contribution to light pollution in JTNP, in coordination with the Night Sky Program Manager (see below);</li> <li>6. Specifications on the use of portable truck-mounted lighting;</li> <li>7. Specification of motion sensors and other controls to be used, especially for security lighting;</li> <li>8. Surface treatment specification that will be employed to minimize glare and skyglow;</li> <li>9. Results of a Lumen Analysis (based on final lighting plans), in consultation with the NPS Night Sky Program Manager (Chad Moore – (970) 491-3700), in order to determine the extent of night lighting exposures in the surrounding NPS lands. If the lighting exposure on NPS lands exceeds the allowable threshold (which is to be determined in consultation with the NPS Night Sky Program Manager), additional control measures will be instituted to reduce the lighting exposures to levels below the action threshold; and</li> <li>10. Documentation that the necessary coordination with the NPS Night Sky Program Manager has occurred.</li> </ol>	Refer to VIS-3.	CEC
<b>WASTE</b>		
<b>WASTE-1, Training and Reporting Plan:</b> The project owner shall prepare a UXO Identification, Training and Reporting Plan to properly train all site workers in the recognition, avoidance and reporting of military waste debris and ordnance. The project owner shall submit the plan to the Compliance Project Manager (CPM) and BLM Authorized Office (AO) for review and approval prior to the start of construction. The plan shall contain, at a minimum, the following:	The project owner shall submit the UXO Identification, Training and Reporting Plan to the CPM for approval no later than 30 days prior to the start of site mobilization. The results of geophysical surveys shall be submitted to the CPM within 30 days of completion of the surveys.	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>WASTE (cont.)</b>		
<ol style="list-style-type: none"> <li>1. A description of the training program outline and materials, and the qualifications of the trainers; and</li> <li>2. Identification of available trained experts that will respond to notification of discovery of any ordnance (unexploded or not); and</li> <li>3. Work plan to recover and remove discovered ordnance, and complete additional field screening, possibly including geophysical surveys to investigate adjacent areas for surface, near surface or buried ordnance in all proposed land disturbance areas.</li> </ol>		
<p><b>WASTE-2, Resume of Professional Engineer or Geologist:</b> The project owner shall provide the résumé of an experienced and qualified Professional Engineer or Professional Geologist to the Compliance Project Manager (CPM) and BLM Authorized Office (AO) for review and approval. The résumé shall show experience in remedial investigation and feasibility studies. This Professional Engineer or Professional Geologist shall be available during site characterization (if needed), excavation, grading, and demolition activities. The Professional Engineer or Professional Geologist shall be given authority by the project owner to oversee any earth-moving activities that have the potential to disturb contaminated soil and impact public health, safety, and the environment.</p>	At least 30 days prior to the start of site mobilization the project owner shall submit the resume to the CPM for review and approval.	CEC
<p><b>WASTE-3, Inspection and Reporting of Potentially Contaminated Soil:</b> If potentially contaminated soil is identified during site characterization, excavation, grading, or demolition at either the proposed site or linear facilities—as evidenced by discoloration, odor, detection by handheld instruments, or other signs—the Professional Engineer or Professional Geologist shall inspect the site; determine the need for sampling to confirm the nature and extent of contamination; and provide a written report to the project owner, representatives of Department of Toxic Substances Control (DTSC) or Regional Water Quality Control Board (RWQCB), the Compliance Project Manager (CPM) and the BLM Authorized Office (AO) stating the recommended course of action.</p> <p>Depending on the nature and extent of contamination, the Professional Engineer or Professional Geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If in the opinion of the Professional Engineer or Professional Geologist significant remediation may be required, the project owner shall contact the CPM, AO and representatives of the DTSC or RWQCB for guidance and possible oversight.</p>	The project owner shall submit any reports filed by the Professional Engineer or Professional Geologist to the CPM within five days of their receipt. The project owner shall notify the CPM within 24 hours of any orders issued to halt construction.	CEC
<p><b>WASTE-4, Construction Waste Management Plan:</b> The project owner shall submit a Construction Waste Management Plan to the Compliance Project Manager (CPM) and the BLM Authorized Office (AO) for review and approval prior to the start of construction. The plan shall contain, at a minimum, the following:</p> <ol style="list-style-type: none"> <li>1. a description of all construction waste streams, including projections of frequency, amounts generated and hazard classifications;</li> <li>2. a survey of structures to be demolished that identifies the types of waste to be managed;</li> <li>3. a reuse/recycling plan for construction and demolition materials that meets or exceeds the 50 percent waste diversion goal established by the Integrated Waste Management Compliance Act; and,</li> <li>4. management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods, and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.</li> </ol>	The project owner shall submit the Construction Waste Management Plan to the CPM for approval no less than 30 days prior to the initiation of construction activities at the site.	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>WASTE (cont.)</b>		
<b>WASTE-5, Hazardous Waste Generator Identification Number:</b> The project owner shall obtain a hazardous waste generator identification number from the United States Environmental Protection Agency (USEPA) prior to generating any hazardous waste during project construction and operations.	The project owner shall keep a copy of the identification number on file at the project site and provide documentation of the hazardous waste generation and notification and receipt of the number to the CPM in the next scheduled Monthly Compliance Report after receipt of the number. Submittal of the notification and issued number documentation to the CPM is only needed once unless there is a change in ownership, operation, waste generation, or waste characteristics that requires a new notification to USEPA. Documentation of any new or revised hazardous waste generation notifications or changes in identification number shall be provided to the CPM in the next scheduled compliance report.	CEC
<b>WASTE-6, Notification of Impending Waste Management-Related Enforcement Action:</b> Upon notification of any impending waste management-related enforcement action by any local, state, or federal authority, the project owner shall notify the Compliance Project Manager (CPM) of any such action taken or proposed against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts, and describe how the violation will be corrected.	The project owner shall notify the CPM in writing within 10 days of receiving written notice from authorities of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the way project-related wastes are managed as a result of a finalized action against the project.	CEC
<p><b>WASTE-7, Operation Waste Management Plan:</b> The project owner shall submit the Operation Waste Management Plan to the CPM for review and approval. The plan shall contain, at a minimum, the following:</p> <ol style="list-style-type: none"> <li>1. a detailed description of all operation and maintenance waste streams, including projections of amounts to be generated, frequency of generation, and waste hazard classifications;</li> <li>2. management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to ensure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans;</li> <li>3. information and summary records of contacts with the local Certified Unified Program Agency and the Department of Toxic Substances Control regarding any waste management requirements necessary for project activities. Copies of all required waste management permits, notices, and/or authorizations shall be included in the plan and updated as necessary;</li> <li>4. a detailed description of how facility wastes will be managed and any contingency plans to be employed, in the event of an unplanned closure or planned temporary facility closure; and</li> <li>5. a detailed description of how facility wastes will be managed and disposed upon closure of the facility.</li> </ol>	<p>The project owner shall submit the Operation Waste Management Plan to the CPM for approval no later than 30 days prior to the start of project operation. The project owner shall submit any required revisions to the CPM within 20 days of notification from the CPM that revisions are necessary.</p> <p>The project owner shall also document in each Annual Compliance Report the actual volume of wastes generated and the waste management methods used during the year, provide a comparison of the actual waste generation and management methods used to those proposed in the original Operation Waste Management Plan, and update the Operation Waste Management Plan as necessary to address current waste generation and management practices.</p>	CEC
<b>WASTE-9:</b> The project owner shall ensure that all accidental spills or unauthorized releases of hazardous substances, hazardous materials, and hazardous waste are documented and remediated, and that wastes generated from accidental spills and unauthorized releases are properly managed and disposed of in accordance with all applicable federal, state, and local LORS and requirements. For the purpose of this Condition of Certification, "release" shall have the definition in Title 40 of the Code of Federal Regulations, Part 302.3.	No later than 30 days of the date that a project-related hazardous substance release was discovered, the project manager shall provide a copy of the accidental spill or unauthorized release documentation to the CPM.	CEC

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>WASTE (cont.)</b>		
	The project owner shall document management of all accidental spills and unauthorized releases of hazardous substances, hazardous materials, and hazardous wastes that occur on the project property or related linear facilities. The documentation shall include, at a minimum, the following information: location of release; date and time of release; reason for release; volume released; how release was managed and material cleaned up; amount of contaminated soil and/or cleanup wastes generated; if the release was reported; to whom the release was reported; release corrective action and cleanup requirements placed by regulating agencies; level of cleanup achieved and actions taken to prevent a similar release or spill; and disposition of any hazardous wastes and/or contaminated soils and materials that may have been generated by the release.	
<b>WASTE-10:</b> The project owner shall ensure that <b>none</b> of the project's non- hazardous, non-recyclable, and non-reusable construction and operation wastes shall be diverted to or deposited at either the Desert Center Landfill or the Oasis Sanitary Landfill.	The project owner shall provide documentation of all project- related solid waste disposal activities and identify the landfills receiving project- related wastes in the Annual Compliance Report submitted to the CPM.	CEC
<b>WORKER SAFETY</b>		
<p><b>WORKER SAFETY-1, Project Construction Safety and Health Program:</b> The project owner shall submit to the Compliance Project Manager (CPM) a copy of the Project Construction Safety and Health Program containing the following:</p> <ol style="list-style-type: none"> <li>1. a Construction Personal Protective Equipment Program;</li> <li>2. a Construction Exposure Monitoring Program;</li> <li>3. a Construction Injury and Illness Prevention Program;</li> <li>4. a Construction heat stress protection plan that implements and expands on existing Cal OSHA regulations as found in 8 CCR 3395;</li> <li>5. a Construction Emergency Action Plan; and</li> <li>6. a Construction Fire Prevention Plan.</li> </ol> <p>The Personal Protective Equipment Program, the Exposure Monitoring Program, the Heat Stress Protection Plan, and the Injury and Illness Prevention Program shall be submitted to the CPM for review and approval concerning compliance of the program with all applicable safety orders. The Construction Emergency Action Plan and the Fire Prevention Plan shall be submitted to the Riverside County Fire Department for review and comment prior to submittal to the CPM for approval.</p>	At least 30 days prior to the start of construction, the project owner shall submit to the CPM for review and approval a copy of the Project Construction Safety and Health Program. The project owner shall provide a copy of a letter to the CPM from the Riverside County Fire Department stating the fire department's comments on the Construction Fire Prevention Plan and Emergency Action Plan.	CEC

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>WORKER SAFETY (cont.)</b>		
<p><b>WORKER SAFETY-2, Project Operations and Maintenance Safety and Health Program:</b> The project owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following:</p> <ol style="list-style-type: none"> <li>1. an Operation Injury and Illness Prevention Plan, including measures to prevent exposure to Valley Fever;</li> <li>2. an Operation heat stress protection plan that implements and expands on existing Cal OSHA regulations (8 CCR 3395);</li> <li>3. a Best Management Practices (BMP) for the storage and application of herbicides;</li> <li>4. an Emergency Action Plan;</li> <li>5. Hazardous Materials Management Program;</li> <li>6. Fire Prevention Plan that includes the fuel depot should the project owner elect to maintain and operate the fuel depot during operations (8 Cal Code Regs. § 3221) as well as the fire protection measures described in this Decision and any necessary upgrades required by current applicable LORS; and</li> <li>7. Personal Protective Equipment Program (8 Cal Code Regs, §§ 3401-3411).</li> </ol> <p>The Operation Injury and Illness Prevention Plan, Emergency Action Plan, Heat Stress Protection Plan, BMP for Herbicides, and Personal Protective Equipment Program shall be submitted to the CPM for review and comment concerning compliance of the programs with all applicable safety orders. The Fire Prevention Plan and the Emergency Action Plan shall also be submitted to the Riverside County Fire Department for review and comment.</p>	<p>At least 30 days prior to the start of first-fire or commissioning, the project owner shall submit to the CPM for approval a copy of the Project Operations and Maintenance Safety and Health Program. The project owner shall provide a copy of a letter to the CPM from the Riverside County Fire Department stating the fire department's comments on the Operations Fire Prevention Plan and Emergency Action Plan.</p>	CEC
<p><b>WORKER SAFETY-3, Construction Safety Supervisor:</b> The project owner shall provide a site Construction Safety Supervisor (CSS) who, by way of training and/or experience, is knowledgeable of power plant construction activities and relevant laws, ordinances, regulations, and standards; is capable of identifying workplace hazards relating to the construction activities; and has authority to take appropriate action to assure compliance and mitigate hazards. The CSS shall:</p> <ol style="list-style-type: none"> <li>1. have overall authority for coordination and implementation of all occupational safety and health practices, policies, and programs;</li> <li>2. assure that the safety program for the project complies with Cal/OSHA and federal regulations related to power plant projects;</li> <li>3. assure that all construction and commissioning workers and supervisors receive adequate safety training;</li> <li>4. complete accident and safety-related incident investigations and emergency response reports for injuries and inform the CPM of safety-related incidents; and</li> <li>5. assure that all the plans identified in Conditions of Certification <b>Worker Safety-1</b> and <b>-2</b> are implemented.</li> </ol>	<p>At least 30 days prior to the start of site mobilization, the project owner shall submit to the CPM the name and contact information for the Construction Safety Supervisor (CSS). The contact information of any replacement CSS shall be submitted to the CPM within one business day. The CSS shall submit in the Monthly Compliance Report a monthly safety inspection report to include:</p> <ol style="list-style-type: none"> <li>A. A record of all employees trained for that month (all records shall be kept on site for the duration of the project);</li> <li>B. A summary report of safety management actions and safety-related incidents that occurred during the month;</li> <li>C. A report of any continuing or unresolved situations and incidents that may pose danger to life or health; and</li> <li>D. A report of accidents and injuries that occurred during the month.</li> </ol>	CEC

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>WORKER SAFETY (cont.)</b>		
<b>WORKER SAFETY-4, Safety Monitor:</b> The project owner shall make payments to the Chief Building Official (CBO) for the services of a Safety Monitor based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. Those services shall be in addition to other work performed by the CBO. The Safety Monitor shall be selected by and report directly to the CBO and will be responsible for verifying that the Construction Safety Supervisor, as required in Condition of Certification <b>WORKER SAFETY-3</b> , implements all appropriate Cal/OSHA and Energy Commission safety requirements. The Safety Monitor shall conduct on-site (including linear facilities) safety inspections at intervals necessary to fulfill those responsibilities.	At least 30 days prior to the start of construction, the project owner shall provide proof of its agreement to fund the Safety Monitor services to the CPM for review and approval.	CEC
<b>WORKER SAFETY-5, Automatic External Defibrillator (AED):</b> The project owner shall ensure that a portable automatic external defibrillator (AED) is located on site during construction and operations and shall implement a program to ensure that workers are properly trained in its use and that the equipment is properly maintained and functioning at all times. During construction and commissioning, the following persons shall be trained in its use and shall be on site whenever the workers that they supervise are on site: the Construction Project Manager or delegate, the Construction Safety Supervisor or delegate, and all shift foremen. During operations, all power plant employees shall be trained in its use. The training program shall be submitted to the CPM for review and approval.	At least 60 days prior to the start of site mobilization, the project owner shall submit to the CPM proof that a portable automatic external defibrillator (AED) exists on site and a copy of the training and maintenance program for review and approval.	CEC
<p><b>WORKER SAFETY-6, Emergency Access Point:</b> The project owner shall:</p> <p>A. Provide a secondary site access gate for emergency personnel to enter the site. This secondary site access gate shall be at least one-quarter mile from the main gate.</p> <p>B. Provide a second access road which provides entry to the site. This road shall be at a minimum an all-weather gravel road, at least 20 feet wide, and shall come from the Interstate-10 right-of-way to the project site at the location of where the fence line of the eastern solar field comes the nearest to the I-10 right-of-way, if approved by Caltrans, a locked gate shall be placed in the I-10 right-of-way fence. The RCFD, the California Highway Patrol, and the Riverside County Sheriff's Department shall be given access to the gate.</p> <p>C. Maintain the main access road and provide a plan for construction and implementation.</p> <p>Plans for the secondary access gate, the method of gate operation, and maintenance of the roads shall be submitted to the Riverside County Fire Department for review and comment and to the CPM for review and approval.</p>	<p>At least 60 days prior to the start of site mobilization, the project owner shall submit to the RCFD and the CPM preliminary plans showing the location of a secondary site access gate to the site, a description of how the secondary site access gate will be opened by the fire department and other emergency services, and a description and map showing the location, dimensions, and composition of the main road, and the gravel road to the secondary site access gate.</p> <p>At least 30 days prior to the start of site mobilization, the project owner shall submit the secondary site access gate final plans plus the road maintenance plan to the CPM for review and approval. The final plan submittal shall also include a letter containing comments from the Riverside County Fire Department or a statement that no comments were received.</p>	
<b>WORKER SAFETY-7, Fire Protection/Response Infrastructure:</b> [To be replaced with a condition that summarizes the agreement with Riverside County that will be finalized after the fire needs assessment is preformed and submitted to Riverside County for review.]		
<p><b>WORKER SAFETY-9, Dust Control Plan:</b> The project owner shall develop and implement an enhanced Dust Control Plan that includes the requirements described in Conditions <b>AQ-SC3</b> and <b>AQ-SC4</b>, and additionally requires:</p> <p>A. Site worker use of dust masks (NIOSH N-95 or better) whenever visible dust is present;</p> <p>B. Implementation of Rule 402 of the Kern County Air Pollution Control District (as amended Nov. 3, 2004); and</p>	At least 30 days prior to the commencement of site mobilization, the enhanced Dust Control Plan shall be provided to the CPM for review and approval.	

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>WORKER SAFETY (cont.)</b>		
C. Implementation of enhanced dust control methods (increased frequency of watering, use of dust suppression chemicals, etc. consistent with <b>AQ-SC4</b> ) immediately whenever visible dust persists in the breathing zone of the workers, or when PM10 measurements obtained when implementing B (above) indicate an increase in PM10 concentrations due to project activities of 50 µg/m3 or more.		
<b>WORKER SAFETY-10, Joint Training with RCFD:</b> The project owner shall participate in annual joint training exercises with the Riverside County Fire Department (RCFD). The project owner shall coordinate this training with other Energy Commission-licensed solar power plants within Riverside County such that this project shall host the annual training on a rotating yearly basis with the other solar power plants.	At least 10 days prior to the start of commissioning, the project owner shall submit to the CPM proof that a joint training program with the RCFD is established. In each January Monthly Compliance Report during construction and the Annual Compliance Report during operation, the project owner shall include the date, list of participants, training protocol, and location of the annual joint training.	
<b>GEOLOGY, PALEONTOLOGY, AND MINERALS</b>		
<b>GEO-1, Soils Engineering Report:</b> The Soils Engineering Report required by Section 1802A of the 2007 CBC should specifically include laboratory test data, associated geotechnical engineering analyses, and a thorough discussion of potential hydrocompaction or dynamic compaction; the presence of expansive clay soils; and the presence of corrosive soils. The report should also include recommendations for ground improvement and/or foundation systems necessary to mitigate these potential geologic hazards, if present.	The project owner shall include in the application for a grading permit a copy of the Soils Engineering Report which addresses the potential for liquefaction; settlement due to compressible soils, ground water withdrawal, hydro-compaction, or dynamic compaction; and the possible presence of expansive clay soils, and a summary of how the results of the analyses were incorporated into the project foundation and grading plan design for review and comment by the Chief Building Official (CBO). A copy of the Soils Engineering Report, application for grading permit and any comments by the CBO are to be provided to BLM's Authorized Officer and the CPM at least 30 days prior to grading.	
<p><b>PAL-1, Paleontological Resources Specialist (PRS):</b> The project owner shall provide the compliance project manager (CPM) with the resume and qualifications of its paleontological resource specialist (PRS) for review and approval. If the approved PRS is replaced prior to completion of project mitigation and submittal of the Paleontological Resources Report, the project owner shall obtain CPM approval of the replacement PRS. The project owner shall keep resumes on file for qualified paleontological resource monitors (PRMs). If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPM.</p> <p>The PRS resume shall include the names and phone numbers of references. The resume shall also demonstrate to the satisfaction of the CPM the appropriate education and experience to accomplish the required paleontological resource tasks.</p> <p>As determined by the CPM, the PRS shall meet the minimum qualifications for a vertebrate paleontologist as described in the Society of Vertebrate Paleontology (SVP) guidelines of 1995. The experience of the PRS shall include the following:</p> <ol style="list-style-type: none"> <li>1. Institutional affiliations, appropriate credentials, and college degree;</li> <li>2. Ability to recognize and collect fossils in the field;</li> </ol>	<ol style="list-style-type: none"> <li>(1) At least 60 days prior to the start of ground disturbance, the project owner shall submit a resume and statement of availability of its designated PRS for on-site work.</li> <li>(2) At least 20 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated monitors for the project, stating that the identified monitors meet the minimum qualifications for paleontological resource monitoring required by the condition. If additional monitors are obtained during the project, the PRS shall provide additional letters and resumes to the CPM. The letter shall be provided to the CPM no later than one week prior to the monitor's beginning on-site duties.</li> </ol>	

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>GEOLOGY, PALEONTOLOGY, AND MINERALS (cont.)</b>		
<p>3. Local geological and biostratigraphic expertise;</p> <p>4. Proficiency in identifying vertebrate and invertebrate fossils; and</p> <p>5. At least three years of paleontological resource mitigation and field experience in California and at least one year of experience leading paleontological resource mitigation and field activities.</p> <p>The project owner shall ensure that the PRS obtains qualified paleontological resource monitors to monitor as he or she deems necessary on the project. Paleontologic resource monitors (PRMs) shall have the equivalent of the following qualifications:</p> <p>1. BS or BA degree in geology or paleontology and one year of experience monitoring in California; or</p> <p>2. AS or AA in geology, paleontology, or biology and four years' experience monitoring in California; or</p> <p>3. Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in California.</p>	<p>(3) Prior to the termination or release of a PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.</p>	
<p><b>PAL-2, Materials for PRS and CPM:</b> The project owner shall provide to the PRS and the CPM, for approval, maps and drawings showing the footprint of the power plant, construction lay-down areas, and all related facilities. Maps shall identify all areas of the project where ground disturbance is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the PRS and CPM. The site grading plan and plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings should show the location, depth, and extent of all ground disturbances and be at a scale between 1 inch = 40 feet and 1 inch = 100 feet. If the footprint of the project or its linear facilities changes, the project owner shall provide maps and drawings reflecting those changes to the PRS and CPM.</p> <p>If construction of the project proceeds in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Before work commences on affected phases, the project owner shall notify the PRS and CPM of any construction phase scheduling changes.</p> <p>At a minimum, the project owner shall ensure that the PRS or PRM consults weekly with the project superintendent or construction field manager to confirm area(s) to be worked the following week and until ground disturbance is completed.</p>	<p>(1) At least 30 days prior to the start of ground disturbance, the project owner shall provide the maps and drawings to the PRS and CPM.</p> <p>(2) If there are changes to the footprint of the project, revised maps and drawings shall be provided to the PRS and CPM at least 15 days prior to the start of ground disturbance.</p> <p>(3) If there are changes to the scheduling of the construction phases, the project owner shall submit a letter to the CPM within 5 days of identifying the changes.</p>	
<p><b>PAL-3, Paleontological Resources Monitoring and Mitigation Plan (PRMMP):</b> The project owner shall ensure that the PRS prepares, and the project owner submits to the CPM for review and approval, a paleontological resources monitoring and mitigation plan (PRMMP) to identify general and specific measures to minimize potential impacts to significant paleontological resources. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for monitoring, collecting, and sampling activities and may be modified with CPM approval. This document shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall reside with the PRS, each monitor, the project owner's on-site manager, and the CPM.</p> <p>The PRMMP shall be developed in accordance with the guidelines of the Society of Vertebrate Paleontology (SVP 1995) and shall include, but not be limited, to the following:</p> <p>1. Assurance that the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, fieldwork, flagging or staking, construction monitoring, mapping and data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation will be performed according to PRMMP procedures;</p>	<p>At least 30 days prior to ground disturbance, the project owner shall provide a copy of the PRMMP to the CPM. The PRMMP shall include an affidavit of authorship by the PRS and acceptance of the PRMMP by the project owner evidenced by a signature.</p>	



## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>GEOLOGY, PALEONTOLOGY, AND MINERALS (cont.)</b>		
<p>2. Identification of the person(s) expected to assist with each of the tasks identified within the PRMMP and the conditions of certification;</p> <p>3. A thorough discussion of the anticipated geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units;</p> <p>4. An explanation of why, how, and how much sampling is expected to take place and in what units. Include descriptions of different sampling procedures that shall be used for fine-grained and coarse-grained units;</p> <p>5. A discussion of the locations of where the monitoring of project construction activities is deemed necessary, and a proposed plan for monitoring and sampling;</p> <p>6. A discussion of procedures to be followed in the event of a significant fossil discovery, halting construction, resuming construction, and how notifications will be performed;</p> <p>7. A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits;</p> <p>8. Procedures for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum, which meet the Society of Vertebrate Paleontology's standards and requirements for the curation of paleontological resources;</p> <p>9. Identification of the institution that has agreed to receive data and fossil materials collected, requirements or specifications for materials delivered for curation and how they will be met, and the name and phone number of the contact person at the institution; and</p> <p>10. A copy of the paleontological conditions of certification.</p>		
<p><b>PAL-4, Approved Weekly Training Pertaining to Ground Disturbance:</b> Prior to ground disturbance and for the duration of construction activities involving ground disturbance, the project owner and the PRS shall prepare and conduct weekly CPM-approved training for the following workers: project managers, construction supervisors, foremen, and general workers involved with or who operate ground-disturbing equipment or tools. Workers shall not excavate in sensitive units prior to receiving CPM-approved worker training. Worker training shall consist of an initial in-person PRS training or may utilize a CPM-approved video or other presentation format during the project kick off for those mentioned above. Following initial training, a CPM-approved video or other approved training presentation/materials, or in-person training may be used for new employees. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern. No ground disturbance shall occur prior to CPM approval of the Worker Environmental Awareness Program (WEAP), unless specifically approved by the CPM. The WEAP shall address the possibility of encountering paleontological resources in the field, the sensitivity and importance of these resources, and legal obligations to preserve and protect those resources.</p> <p>The training shall include:</p> <p>1. A discussion of applicable laws and penalties under the law;</p>	<p>(1) At least 30 days prior to ground disturbance, the project owner shall submit the proposed WEAP, including the brochure, with the set of reporting procedures for workers to follow.</p> <p>(2) At least 30 days prior to ground disturbance, the project owner shall submit the training program presentation/materials to the CPM for approval if the project owner is planning to use a presentation format other than an in-person trainer for training.</p> <p>(3) If the owner requests an alternate paleontological trainer, the resume and qualifications of the trainer shall be submitted to the CPM for review and approval prior to installation of an alternate trainer. Alternate trainers shall not conduct training prior to CPM authorization.</p>	

## APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>GEOLOGY, PALEONTOLOGY, AND MINERALS (cont.)</b>		
<ol style="list-style-type: none"> <li>Good quality photographs or physical examples of vertebrate fossils for project sites containing units of high paleontologic sensitivity;</li> <li>Information that the PRS or PRM has the authority to halt or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource;</li> <li>Instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM;</li> <li>An informational brochure that identifies reporting procedures in the event of a discovery;</li> <li>A WEAP certification of completion form signed by each worker indicating that he/she has received the training; and</li> <li>A sticker that shall be placed on hard hats indicating that environmental training has been completed.</li> </ol>	<p>(4) In the monthly compliance report (MCR), the project owner shall provide copies of the WEAP certification of completion forms with the names of those trained and the trainer or type of training (in-person or other approved format) offered that month. The MCR shall also include a running total of all persons who have completed the training to date.</p>	
<p><b>PAL-5, Paleontological Monitoring Activities:</b> The project owner shall ensure that the PRS and PRM(s) monitor consistent with the PRMMP all construction-related grading, excavation, trenching, and augering in areas where potential fossil-bearing materials have been identified, both at the site and along any constructed linear facilities associated with the project. In the event that the PRS determines full-time monitoring is not necessary in locations that were identified as potentially fossil bearing in the PRMMP, the project owner shall notify and seek the concurrence of the CPM. The project owner shall ensure that the PRS and PRM(s) have the authority to halt or redirect construction if paleontological resources are encountered. The project owner shall ensure that there is no interference with monitoring activities unless directed by the PRS. Monitoring activities shall be conducted as follows:</p> <ol style="list-style-type: none"> <li>Any change of monitoring from the accepted schedule in the PRMMP shall be proposed in a letter or email from the PRS and the project owner to the CPM prior to the change in monitoring and will be included in the monthly compliance report. The letter or email shall include the justification for the change in monitoring and be submitted to the CPM for review and approval.</li> <li>The project owner shall ensure that the PRM(s) keep a daily monitoring log of paleontological resource activities. The PRS may informally discuss paleontological resource monitoring and mitigation activities with the CPM at any time.</li> <li>The project owner shall ensure that the PRS notifies the CPM within 24 hours of the occurrence of any incidents of non-compliance with any paleontological resources conditions of certification. The PRS shall recommend corrective action to resolve the issues or achieve compliance with the conditions of certification.</li> <li>For any significant paleontological resources encountered, either the project owner or the PRS shall notify the CPM within 24 hours, or Monday morning in the case of a weekend event, where construction has been halted because of a paleontological find.</li> </ol> <p>The project owner shall ensure that the PRS prepares a summary of monitoring and other paleontological activities placed in the monthly compliance reports. The summary will include the name(s) of PRS or PRM(s) active during the month; general descriptions of training and monitored construction activities; and general locations of excavations, grading, and other activities. A section of the report shall include the geologic units or subunits encountered, descriptions of samplings within each unit, and a list of identified fossils. A final section of the report will address any issues or concerns about the project relating to paleontologic monitoring, including any incidents of non-compliance or any changes to the monitoring plan that have been approved by the CPM. If no monitoring took place during the month, the report shall include an explanation in the summary as to why monitoring was not conducted.</p>	<p>The project owner shall ensure that the PRS submits the summary of monitoring and paleontological activities in the MCR. When feasible, the CPM shall be notified 10 days in advance of any proposed changes in monitoring different from the plan identified in the PRMMP. If there is any unforeseen change in monitoring, the notice shall be given as soon as possible prior to implementation of the change.</p>	

### APPLICANT PROPOSED MEASURES

Conditions of Certification	Verification	Responsible Agency
<b>GEOLOGY, PALEONTOLOGY, AND MINERALS (cont.)</b>		
<p><b>PAL-6, Implementation of PRMMP:</b> The project owner, through the designated PRS, shall ensure that all components of the PRMMP are adequately performed including collection of fossil materials, preparation of fossil materials for analysis, analysis of fossils, identification and inventory of fossils, the preparation of fossils for curation, and the delivery for curation of all significant paleontological resource materials encountered and collected during project construction.</p>	<p>The project owner shall maintain in his/her compliance file copies of signed contracts or agreements with the designated PRS and other qualified research specialists. The project owner shall maintain these files for a period of three years after project completion and approval of the CPM-approved paleontological resource report (see Condition of Certification <b>PAL-7</b>). The project owner shall be responsible for paying any curation fees charged by the museum for fossils collected and curated as a result of paleontological mitigation. A copy of the letter of transmittal submitting the fossils to the curating institution shall be provided to the CPM.</p>	
<p><b>PAL-7, Paleontological Resources Report (PRR):</b> The project owner shall ensure preparation of a Paleontological Resources Report (PRR) by the designated PRS. The PRR shall be prepared following completion of the ground-disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information and submit it to the CPM for review and approval. The report shall include, but is not limited to, a description and inventory of recovered fossil materials; a map showing the location of paleontological resources encountered; determinations of sensitivity and significance; and a statement by the PRS that project impacts to paleontological resources have been mitigated below the level of significance.</p>	<p>Within 90 days after completion of ground-disturbing activities, including landscaping, the project owner shall submit the PRR under confidential cover to the CPM.</p>	

## **APPENDIX D**

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### Air Quality Laws, Regulations, and Policies

**APPLICABLE LAWS, REGULATIONS, POLICIES, AND EXECUTIVE ORDERS**

<b>AIR QUALITY</b>	
<b>Federal</b>	
40 CFR Part 52	<p>Nonattainment New Source Review (NSR) requires a permit, Best Available Control Technology (BACT) and Offsets. Permitting and enforcement is delegated to the Mojave Desert Air Quality Management District (MDAQMD).</p> <p>Prevention of Significant Deterioration (PSD) requires major sources or major modifications to major sources to obtain permits for attainment pollutants. The PSPP is a new source that does not have a rule listed emission source; thus, the PSD trigger levels are 250 tons per year for NOx, VOC, SOx, PM10 PM2.5 and CO.</p>
40 CFR Part 60	<p>New Source Performance Standards (NSPS), Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generation Units. Establishes recordkeeping and reporting requirements for natural gas-fired steam-generating units.</p> <p>Subpart IIII Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Establishes emission standards for compression-ignition internal combustion engines, including emergency generator and fire water pump engines.</p>
40 CFR Part 93	General Conformity requires a determination of conformity with the State Implementation Plan for a project that requires a Federal approval if the project's annual emissions are above specified levels.
<b>State</b>	
California Health & Safety Code §§ 40910-40930	Permitting of source needs to be consistent with Air Resource Board (ARB) approved Clean Air Plans.
Health & Safety Code § 41700	Restricts emissions that would cause nuisance or injury.
Title 17 California Code of Regulations (CCR) § 93115	Airborne Toxic Control Measure for Stationary Compression Ignition Engines limits the types of fuels allowed, establishes maximum emission rates, and establishes recordkeeping requirements on stationary compression ignition engines, including emergency generator and fire water pump engines.
Rule 201 and 203 Permits Required	Requires a Permit to Construct before construction of an emission source occurs. Prohibits operation of any equipment that emits or controls an air pollutant without first obtaining a permit to operate.
<b>Local (South Coast Air Quality Management District, SCAQMD)</b>	
Regulation XIII-NSR	Requires pre-construction review for all proposed new or modified stationary sources. Review includes a BACT determination, mitigation analysis, air quality impact analysis, etc.
Regulation XIV-Rule 1401-Toxics NSR	Requires pre-construction review for all proposed new or modified stationary sources emitting toxic pollutants. Establishes risk significance levels and review procedures.
Regulation XXX-Title V	Implements the provisions of the federal operating permits program and the requirements of the CAA Title V.
Regulation XXXI-Acid Rain Permit Program	Implements the provisions of the federal Acid Rain Program. See rule provisions Subpart A-I.
Rule 401-Visible Emissions	Limits visible emissions from applicable processes to values no darker than Ringelmann #1 for periods greater than 3 minutes in any hour.
Rule 402-Nuisance	Prohibits emissions in quantities that would adversely affect public health, other businesses, or property.
Rule 403-Fugitive Dust	Limits fugitive PM emissions from construction and construction related activities.
Rule 404-Particulate Matter	Limits PM concentration in exhaust from boilers, heaters, IC engines, etc.
Rule 409-Combustion Contaminants	Limits PM emissions from combustion sources.
Rule 429-Nox Exemptions for Startup/Shutdown	Provides NOx emissions exemptions for boiler subject to Rule 1146 for periods of startup and shutdown.

**APPLICABLE LAWS, REGULATIONS, POLICIES, AND EXECUTIVE ORDERS (Continued)**

<b>Applicable LORS</b>	<b>Description</b>
<b>AIR QUALITY (cont.)</b>	
<b>Local (South Coast Air Quality Management District, SCAQMD) (cont.)</b>	
Rule 431-Sulfur Content of Fuels (431.1-431.3)	Limits the sulfur content of fuels combusted in stationary sources.
Rule 433-Natural Gas Quality	Applies to all natural gas distribution system operators that convey natural gas to end users within the District.
Rule 442-Organic Solvents	Limits emissions of VOC from materials or processes using VOC containing products.
Rule 463-Storage of Organic Liquids	Limits VOC emissions from the storage and transfer of VOC containing materials.
Rule 474-Fuel Burning Equipment-NOx	Limits NOx emissions from non-mobile fuel burning equipment.
Regulation IX-NSPS	New Source Performance Standards (NSPS) Potentially applicable Subparts: Db, Dc, IIII.
Rule 1110.2-Gaseous and Liquid Fueled Engines	Limits NOx, VOC, and CO emissions from gaseous and liquid fueled IC engines.
Rule 1121-NOx Control from NG Fired Water Heaters	Limits NOx emissions from natural gas fired residential type water heaters.
Rule 1146-NOx Emissions from IIC Boilers and Process Heaters	Limits NOx from boilers, steam generators, and heaters rated at greater than 5 mmbtu/hr.
Rule 1171-Solvent Cleaning Operations	Limits VOC, TAC, and SODS emissions from solvent use in cleaning operations activities.
Regulation XIX-Federal Conformity	Implements the General Conformity requirements of 40 CFR Parts 6 and 51.

**Table 4.1E-5 Construction Emissions Estimates (33 Pages)**

Document: 459892-PSEGS-DOC-005  
 Client: BrightSource Industries Israel  
 Project: Palen Solar Electric Generating Facility

Const Months: 33  
 Workdays per month: 21

							Total
Qty	Equipment	Fuel	HP	Usage Factor	Load Factor	Daily Operation	Equip Months
<b>Solar Field Assembly and Installation (total for 2 plants)</b>							
2 ea	ISO Carrier	Diesel	290 hp	80%	57%	8 hrs/day	48
2 ea	10,000 lb Forklift	Diesel	90 hp	80%	30%	16 hrs/day	48
2 ea	300 cfm Air Compressor	Diesel	140 hp	80%	48%	16 hrs/day	48
2 ea	Yard Tractors	Diesel	250 hp	80%	60%	16 hrs/day	52
6 ea	Grader (CAT 160M AWD)	Diesel	215 hp	80%	61%	8 hrs/day	86
16 ea	Farm Tractors	Diesel	75 hp	80%	55%	8 hrs/day	392
2 ea	35 ton Rough Terrain Crane	Diesel	160 hp	80%	43%	8 hrs/day	52
4 ea	Pylon Insertion Rigs	Diesel	670 hp	80%	62%	8 hrs/day	96
<b>Site Road Work</b>							
2 ea	Grader (CAT 160M AWD)	Diesel	215 hp	80%	61%	8 hrs/day	12
4 ea	Elevating Scraper (CAT)	Diesel	330 hp	80%	72%	8 hrs/day	20
1 ea	Compactor (CAT CP74)	Diesel	160 hp	80%	50%	8 hrs/day	5
1 ea	Paver	Diesel	220 hp	80%	62%	6 hrs/day	4
<b>Concrete Batch Plant</b>							
1 ea	Front End Loader (CAT 980K)	Diesel	369 hp	80%	55%	8 hrs/day	14
20 ea	Concrete Transit Mix Trucks	Diesel	400 hp	80%	62%	8 hrs/day	218
<b>Tower and Boiler Erection (total for 2 plants)</b>							
2 ea	Strand Jack System	Diesel	670 hp	80%	62%	5 hrs/day	12
2 ea	888 Manitowoc Crawler Crane	Diesel	330 hp	80%	43%	8 hrs/day	16
2 ea	120 ton Rough Terrain Picker	Diesel	300 hp	80%	43%	8 hrs/day	18
4 ea	50 ton Rough Terrain Picker	Diesel	190 hp	80%	43%	8 hrs/day	33
2 ea	10,000 lb Forklift	Diesel	90 hp	80%	30%	8 hrs/day	18
8 ea	400 amp Diesel Welders	Diesel	40 hp	80%	45%	8 hrs/day	54
8 ea	300 cfm Air Compressor	Diesel	140 hp	80%	48%	8 hrs/day	66
12 ea	125 ft Manlift	Diesel	75 hp	80%	46%	8 hrs/day	102
4 ea	Semi Tractor	Diesel	250 hp	80%	62%	8 hrs/day	36
<b>ACC Erection (total for 2 plants)</b>							
2 ea	888 Manitowoc Crawler Crane	Diesel	330 hp	80%	43%	8 hrs/day	16
4 ea	50 ton Rough Terrain Picker	Diesel	190 hp	80%	43%	8 hrs/day	44
2 ea	50,000 lb Forklift	Diesel	230 hp	80%	30%	8 hrs/day	18
2 ea	10,000 lb Forklift	Diesel	90 hp	80%	30%	8 hrs/day	20
4 ea	40 ft Manlift	Diesel	50 hp	80%	46%	8 hrs/day	39
4 ea	60 ft Manlift	Diesel	50 hp	80%	46%	8 hrs/day	39
4 ea	85 ft Manlift	Diesel	75 hp	80%	46%	8 hrs/day	42
2 ea	400 amp Diesel Welders	Diesel	40 hp	80%	45%	8 hrs/day	20
2 ea	Semi Tractor	Diesel	250 hp	80%	62%	8 hrs/day	26
4 ea	300 cfm Air Compressor	Diesel	140 hp	80%	48%	8 hrs/day	40
<b>Power Block Erection (total for 2 plants)</b>							
2 ea	888 Manitowoc Crawler Crane	Diesel	330 hp	80%	43%	8 hrs/day	10
2 ea	55 ton Rough Terrain Crane	Diesel	250 hp	80%	43%	8 hrs/day	36
4 ea	35 ton Rough Terrain Crane	Diesel	160 hp	80%	43%	8 hrs/day	93
2 ea	Front End Loader (CAT 980K)	Diesel	369 hp	80%	55%	8 hrs/day	14
2 ea	Excavator, Hydraulic (CAT 318E)	Diesel	120 hp	40%	70%	8 hrs/day	14
2 ea	Compactor (CAT CP74)	Diesel	160 hp	80%	50%	8 hrs/day	12
4 ea	400 amp Diesel Welders	Diesel	40 hp	80%	45%	8 hrs/day	92
4 ea	300 cfm Air Compressor	Diesel	140 hp	80%	48%	8 hrs/day	92
4 ea	40 ft Manlift	Diesel	50 hp	80%	46%	8 hrs/day	88
8 ea	60 ft Manlift	Diesel	50 hp	80%	46%	8 hrs/day	114
4 ea	85 ft Manlift	Diesel	75 hp	80%	46%	8 hrs/day	53
4 ea	10,000 lb Forklift	Diesel	90 hp	80%	30%	8 hrs/day	55
4 ea	Semi Tractor	Diesel	250 hp	80%	62%	8 hrs/day	55
<b>Common Area and Switchyard</b>							
1 ea	35 ton Rough Terrain Crane	Diesel	160 hp	80%	43%	8 hrs/day	11
1 ea	Excavator, Hydraulic (CAT 318E)	Diesel	120 hp	40%	70%	8 hrs/day	8
1 ea	Trencher (Vermeer T555)	Diesel	185 hp	35%	60%	8 hrs/day	5
1 ea	Elevating Scraper (CAT)	Diesel	330 hp	80%	72%	8 hrs/day	5
1 ea	Bulldozer (CAT D6N)	Diesel	150 hp	40%	60%	8 hrs/day	9
1 ea	Compactor (CAT CP74)	Diesel	160 hp	80%	50%	8 hrs/day	7
1 ea	10,000 lb Forklift	Diesel	90 hp	80%	30%	8 hrs/day	6
2 ea	60 ft Manlift	Diesel	50 hp	80%	46%	8 hrs/day	22
1 ea	400 amp Diesel Welders	Diesel	40 hp	80%	45%	8 hrs/day	4
1 ea	300 cfm Air Compressor	Diesel	140 hp	80%	48%	8 hrs/day	4
<b>Miscellaneous</b>							
6 ea	Water Trucks (4,000 gallon)	Diesel	250 hp	60%	41%	8 hrs/day	159
6 ea	Dump Truck, 12-16 YD	Diesel	325 hp	40%	38%	8 hrs/day	57
8 ea	Pickup Trucks	Gasoline	250 hp	25%	60%	8 hrs/day	248
12 ea	AWD Gators	Gasoline	25 hp	25%	50%	8 hrs/day	326
2 ea	Diesel Generator, 500 kW	Diesel	730 hp	45%	50%	8 hrs/day	18
8 ea	Diesel Generator, 1250 kW	Diesel	1,750 hp	45%	50%	8 hrs/day	56

Any equip type described under Load Factor as "On Road" on Table E.5-7 were assigned Usage Factors and Load Factors based on the SCAQMD CEQA Handbook data tables.

Load and use factors not counted in Hp-Hr calculations, since these parameters are accounted for in the SCAQMD emissions factors (2013).



Total Equip Days	Hp-Hrs per Day	Total Period Hp-Hrs	Emissions Factors (SCAQMD Offroad Database for 2013)						
			VOC	CO	Nox	lbs/hp-hr			
						SOx	PM10/2.5	CO2	CH4
1008	2320	2338560	0.0006235	0.00433151	0.00588838	8.0426E-06	0.00034397	0.71478726	7.4303E-05
1008	1440	1451520	0.00036498	0.0018134	0.00232311	3.0524E-06	0.0002009	0.26020763	3.2932E-05
1008	2240	2257920	0.00068712	0.00270913	0.00415922	4.5896E-06	0.00037965	0.39125195	6.1998E-05
1092	4000	4368000	0.00065653	0.0018763	0.00578114	5.8697E-06	0.0002405	0.52166926	5.9238E-05
1806	1720	3106320	0.00083826	0.00419732	0.00639624	7.9676E-06	0.0003608	0.70812305	7.5635E-05
8232	600	4939200	0.00176099	0.00599226	0.01030696	9.1632E-06	0.0008983	0.78114508	0.00015889
1092	1280	1397760	0.00058936	0.00275489	0.00443923	5.1658E-06	0.00025438	0.45911188	5.3177E-05
2016	5360	10805760	0.00040205	0.00430746	0.00396039	9.0706E-06	0.00017232	0.80615095	3.6276E-05
17262	18960	30665040							
252	1720	433440	0.00083826	0.00419732	0.00639624	7.9676E-06	0.0003608	0.70812305	7.5635E-05
420	2640	1108800	0.00090099	0.00256338	0.00819244	9.4276E-06	0.00031628	0.83788089	8.1295E-05
105	1280	134400	0.00072034	0.00327316	0.0053333	6.168E-06	0.00031386	0.54818254	6.4995E-05
84	1320	110880	0.00082868	0.00243221	0.00778747	8.7481E-06	0.00030225	0.77748782	7.477E-05
861	6960	1787520							
294	2952	867888	0.00050341	0.00147381	0.00484993	6.705E-06	0.00016676	0.59590672	4.5422E-05
4578	3200	14649600	0.00042696	0.00127675	0.0041284	5.2102E-06	0.00013865	0.53082357	3.8524E-05
4872	6152	15517488							
252	3350	844200	0.00034199	0.00145324	0.00311683	8.2461E-06	9.5303E-05	0.82012413	3.0858E-05
336	2640	887040	0.00041613	0.00117911	0.00397901	5.0479E-06	0.00014037	0.44863548	3.7547E-05
378	2400	907200	0.00046486	0.00202084	0.00313134	3.7217E-06	0.00024895	0.31726514	4.1944E-05
693	1520	1053360	0.00046486	0.00202084	0.00313134	3.7217E-06	0.00024895	0.31726514	4.1944E-05
378	720	272160	0.00036498	0.0018134	0.00232311	3.0524E-06	0.0002009	0.26020763	3.2932E-05
1134	320	362880	0.00195865	0.00550649	0.00506942	6.7115E-06	0.0004794	0.5191612	0.00017673
1386	1120	1552320	0.00068712	0.00270913	0.00415922	4.5896E-06	0.00037965	0.39125195	6.1998E-05
2142	600	1285200	0.00118313	0.00351491	0.00367918	5.0709E-06	0.00031107	0.39225519	0.00010675
756	2000	1512000	0.00055989	0.00153465	0.00494923	7.4957E-06	0.00016495	0.66618161	5.0518E-05
7455	14670	8676360							
336	2640	887040	0.00041613	0.00117911	0.00397901	5.0479E-06	0.00014037	0.44863548	3.7547E-05
924	1520	1404480	0.00046486	0.00202084	0.00313134	3.7217E-06	0.00024895	0.31726514	4.1944E-05
378	1840	695520	0.00022802	0.00064556	0.00211258	3.471E-06	6.7038E-05	0.30848706	2.0574E-05
420	720	302400	0.00036498	0.0018134	0.00232311	3.0524E-06	0.0002009	0.26020763	3.2932E-05
819	400	327600	0.00118313	0.00351491	0.00367918	5.0709E-06	0.00031107	0.39225519	0.00010675
819	400	327600	0.00118313	0.00351491	0.00367918	5.0709E-06	0.00031107	0.39225519	0.00010675
882	600	529200	0.00118313	0.00351491	0.00367918	5.0709E-06	0.00031107	0.39225519	0.00010675
420	320	134400	0.00195865	0.00550649	0.00506942	6.7115E-06	0.0004794	0.5191612	0.00017673
546	2000	1092000	0.00055989	0.00153465	0.00494923	7.4957E-06	0.00016495	0.66618161	5.0518E-05
840	1120	940800	0.00068712	0.00270913	0.00415922	4.5896E-06	0.00037965	0.39125195	6.1998E-05
6384	11560	6641040							
210	2640	554400	0.00041613	0.00117911	0.00397901	5.0479E-06	0.00014037	0.44863548	3.7547E-05
756	2000	1512000	0.00041613	0.00117911	0.00397901	5.0479E-06	0.00014037	0.44863548	3.7547E-05
1953	1280	2499840	0.00058936	0.00275489	0.00443923	5.1658E-06	0.00025438	0.45911188	5.3177E-05
294	2952	867888	0.00050341	0.00147381	0.00484993	6.705E-06	0.00016676	0.59590672	4.5422E-05
294	960	282240	0.0009053	0.00431384	0.0056594	7.197E-06	0.0004886	0.61352552	8.1684E-05
252	1280	322560	0.00072034	0.00327316	0.0053333	6.168E-06	0.00031386	0.54818254	6.4995E-05
1932	320	618240	0.00195865	0.00550649	0.00506942	6.7115E-06	0.0004794	0.5191612	0.00017673
1932	1120	2163840	0.00068712	0.00270913	0.00415922	4.5896E-06	0.00037965	0.39125195	6.1998E-05
1848	400	739200	0.00118313	0.00351491	0.00367918	5.0709E-06	0.00031107	0.39225519	0.00010675
2394	400	957600	0.00118313	0.00351491	0.00367918	5.0709E-06	0.00031107	0.39225519	0.00010675
1113	600	667800	0.00118313	0.00351491	0.00367918	5.0709E-06	0.00031107	0.39225519	0.00010675
1155	720	831600	0.00036498	0.0018134	0.00232311	3.0524E-06	0.0002009	0.26020763	3.2932E-05
1155	2000	2310000	0.00055989	0.00153465	0.00494923	7.4957E-06	0.00016495	0.66618161	5.0518E-05
15288	16672	14327208							
231	1280	295680	0.00058936	0.00275489	0.00443923	5.1658E-06	0.00025438	0.45911188	5.3177E-05
168	960	161280	0.0009053	0.00431384	0.0056594	7.197E-06	0.0004886	0.61352552	8.1684E-05
105	1480	155400	0.00111695	0.00493278	0.00888838	9.252E-06	0.00048506	0.82227397	0.00010078
105	2640	277200	0.00090099	0.00256338	0.00819244	9.4276E-06	0.00031628	0.83788089	8.1295E-05
189	1200	226800	0.00095637	0.00425626	0.00715924	7.7918E-06	0.00040754	0.69250166	8.6291E-05
147	1280	188160	0.00072034	0.00327316	0.0053333	6.168E-06	0.00031386	0.54818254	6.4995E-05
126	720	90720	0.00036498	0.0018134	0.00232311	3.0524E-06	0.0002009	0.26020763	3.2932E-05
462	400	184800	0.00118313	0.00351491	0.00367918	5.0709E-06	0.00031107	0.39225519	0.00010675
84	320	26880	0.00195865	0.00550649	0.00506942	6.7115E-06	0.0004794	0.5191612	0.00017673
84	1120	94080	0.00068712	0.00270913	0.00415922	4.5896E-06	0.00037965	0.39125195	6.1998E-05
1701	11400	1701000							
3339	2000	6678000	0.00055989	0.00153465	0.00494923	7.4957E-06	0.00016495	0.66618161	5.0518E-05
1197	2600	3112200	0.00055989	0.00153465	0.00494923	7.4957E-06	0.00016495	0.66618161	5.0518E-05
5208	2000	10416000	0.00003402	0.0004062	0.00004104	0.00000006	0.00000642	0.065358	0
6846	200	1369200	0.0003402	0.004062	0.00004104	0.0000006	0.00000642	0.65358	0
378	5840	2207520	0.00040461	0.0015561	0.00531507	7.2902E-06	0.00015125	0.72505326	3.6508E-05
1176	14000	16464000	0.00040461	0.0015561	0.00531507	7.2902E-06	0.00015125	0.72505326	3.6508E-05
18144	26640	40246920							

Construction Totals      lbs/period  
tons/period\



Emissions, lbs/construction period						
VOC	CO	Nox	SOx	PM10/2.5	CO2	CH4
1925.8	10129.5	13770.3	18.8	804.4	1671572.9	173.8
529.8	2632.2	3372.0	4.4	291.6	377696.6	47.8
1551.5	6117.0	9391.2	10.4	857.2	883415.6	140.0
2867.7	8195.7	25252.0	25.6	1050.5	2278651.3	258.8
2603.9	13038.2	19868.8	24.7	1120.8	2199656.8	234.9
8697.9	29596.9	50908.2	45.3	4436.9	3858231.8	784.8
823.8	3850.7	6205.0	7.2	355.6	641728.2	74.3
4344.4	46545.3	42795.0	98.0	1862.0	8711073.7	392.0
23344.795	120105.54	171562.51	234.48431	10778.963	20622027	2106.3633
363.3	1819.3	2772.4	3.5	156.4	306928.9	32.8
999.0	2842.3	9083.8	10.5	350.7	929042.3	90.1
96.8	439.9	716.8	0.8	42.2	73675.7	8.7
91.9	269.7	863.5	1.0	33.5	86207.8	8.3
1551.0568	5371.1571	13436.432	15.705761	582.77505	1395854.8	139.94939
436.9	1279.1	4209.2	5.8	144.7	517180.3	39.4
6254.8	18703.9	60479.4	76.3	2031.2	7776353.0	564.4
6691.7488	19982.964	64688.642	82.146619	2175.9376	8293533.2	603.78573
288.7	1226.8	2631.2	7.0	80.5	692348.8	26.0
369.1	1045.9	3529.5	4.5	124.5	397957.6	33.3
421.7	1833.3	2840.7	3.4	225.8	287822.9	38.1
489.7	2128.7	3298.4	3.9	262.2	334194.4	44.2
99.3	493.5	632.3	0.8	54.7	70818.1	9.0
710.8	1998.2	1839.6	2.4	174.0	188393.2	64.1
1066.6	4205.4	6456.4	7.1	589.3	607348.2	96.2
1520.6	4517.4	4728.5	6.5	399.8	504126.4	137.2
846.6	2320.4	7483.2	11.3	249.4	1007266.6	76.4
5813.0571	19769.657	33439.948	46.976929	2160.2161	4090276.3	524.50284
369.1	1045.9	3529.5	4.5	124.5	397957.6	33.3
652.9	2838.2	4397.9	5.2	349.6	445592.5	58.9
158.6	449.0	1469.3	2.4	46.6	214558.9	14.3
110.4	548.4	702.5	0.9	60.8	78686.8	10.0
387.6	1151.5	1205.3	1.7	101.9	128502.8	35.0
387.6	1151.5	1205.3	1.7	101.9	128502.8	35.0
626.1	1880.1	1947.0	2.7	164.6	207581.4	56.5
263.2	740.1	681.3	0.9	64.4	69775.3	23.8
611.4	1675.8	5404.6	8.2	180.1	727470.3	55.2
646.4	2548.8	3913.0	4.3	357.2	368089.8	58.3
4213.3606	14009.25	24455.799	32.453068	1551.6944	2766718.3	380.16479
230.7	653.7	2206.0	2.8	77.8	248723.5	20.8
629.2	1782.8	6016.3	7.6	212.2	678336.8	56.8
1473.3	6886.8	11097.4	12.9	635.9	1147706.2	132.9
436.9	1279.1	4209.2	5.8	144.7	517180.3	39.4
255.5	1217.5	1597.3	2.0	137.9	173161.4	23.1
232.4	1055.8	1720.3	2.0	101.2	176821.8	21.0
1210.9	3404.3	3134.1	4.1	296.4	320966.2	109.3
1406.8	5962.1	8999.9	9.9	821.5	848606.6	134.2
874.6	2598.2	2719.7	3.7	229.9	289955.0	78.9
1133.0	3365.9	3523.2	4.9	297.9	375623.6	102.2
790.1	2347.3	2457.0	3.4	207.7	261948.0	71.3
303.5	1508.0	1931.9	2.5	167.1	216388.7	27.4
1293.3	3545.0	11432.7	17.3	381.0	1538879.5	116.7
10350.183	35506.605	61044.81	79.109081	3711.3815	6792297.7	933.88047
174.3	814.6	1312.5	1.5	75.2	135750.2	15.7
146.0	695.7	912.7	1.2	78.8	98949.4	13.2
173.6	766.6	1378.1	1.4	75.4	127781.4	15.7
249.8	710.6	2270.9	2.6	87.7	232260.6	22.5
216.9	965.3	1623.7	1.8	92.4	157059.4	19.6
135.5	615.9	1003.5	1.2	59.1	103146.0	12.2
33.1	164.5	210.8	0.3	18.2	23606.0	3.0
218.6	649.6	679.9	0.9	57.5	72488.8	19.7
52.6	148.0	136.3	0.2	12.9	13955.1	4.8
64.6	254.9	391.3	0.4	35.7	36809.0	5.8
1465.0858	5785.5771	9919.8879	11.493198	592.87159	1001805.8	132.19235
3738.9	10248.4	33051.0	50.1	1101.5	4448760.8	337.4
1742.5	4776.1	15403.0	23.3	513.4	2073290.4	157.2
354.4	4231.0	427.5	6.2	66.9	680768.9	0.0
465.8	5561.7	561.9	8.2	87.9	894881.7	0.0
893.2	3435.1	11733.1	16.1	333.9	1600569.6	80.6
6661.6	25619.7	87507.3	120.0	2490.2	11937276.9	601.1
13856.33	53872.015	148683.8	223.96838	4593.7977	21635548	1176.2335
67285.6	274402.8	527231.8	726.3	26147.6	66598061.5	5997.1
33.64	137.20	263.62	0.36	13.07	33299.03	3.00

Emissions, lbs/construction month						
VOC	CO	Nox	SOx	PM10/2.5	CO2	CH4
58.4	307.0	417.3	0.6	24.4	50653.7	5.3
16.1	79.8	102.2	0.1	8.8	11445.4	1.4
47.0	185.4	284.6	0.3	26.0	26770.2	4.2
86.9	248.4	765.2	0.8	31.8	69050.0	7.8
78.9	395.1	602.1	0.7	34.0	66656.3	7.1
263.6	896.9	1542.7	1.4	134.5	116916.1	23.8
25.0	116.7	188.0	0.2	10.8	19446.3	2.3
131.6	1410.5	1296.8	3.0	56.4	263971.9	11.9
707.41802	3639.5619	5198.8639	7.1055851	326.63525	624909.91	63.829192
11.0	55.1	84.0	0.1	4.7	9300.9	1.0
30.3	86.1	275.3	0.3	10.6	28152.8	2.7
2.9	13.3	21.7	0.0	1.3	2232.6	0.3
2.8	8.2	26.2	0.0	1.0	2612.4	0.3
47.001721	162.76234	407.16462	0.4759322	17.65985	42298.629	4.2408905
13.2	38.8	127.6	0.2	4.4	15672.1	1.2
189.5	566.8	1832.7	2.3	61.6	235647.1	17.1
202.78027	605.54437	1960.2619	2.4892915	65.937502	251319.19	18.296537
8.7	37.2	79.7	0.2	2.4	20980.3	0.8
11.2	31.7	107.0	0.1	3.8	12059.3	1.0
12.8	55.6	86.1	0.1	6.8	8721.9	1.2
14.8	64.5	100.0	0.1	7.9	10127.1	1.3
3.0	15.0	19.2	0.0	1.7	2146.0	0.3
21.5	60.6	55.7	0.1	5.3	5708.9	1.9
32.3	127.4	195.6	0.2	17.9	18404.5	2.9
46.1	136.9	143.3	0.2	12.1	15276.6	4.2
25.7	70.3	226.8	0.3	7.6	30523.2	2.3
176.15325	599.08053	1013.3317	1.4235433	65.461094	123947.77	15.894025
11.2	31.7	107.0	0.1	3.8	12059.3	1.0
19.8	86.0	133.3	0.2	10.6	13502.8	1.8
4.8	13.6	44.5	0.1	1.4	6501.8	0.4
3.3	16.6	21.3	0.0	1.8	2384.4	0.3
11.7	34.9	36.5	0.1	3.1	3894.0	1.1
11.7	34.9	36.5	0.1	3.1	3894.0	1.1
19.0	56.4	59.0	0.1	5.0	6290.3	1.7
8.0	22.4	20.6	0.0	2.0	2114.4	0.7
18.5	60.8	163.8	0.2	5.5	22044.6	1.7
19.6	77.2	118.6	0.1	10.8	11154.2	1.8
127.67759	424.52271	741.08482	0.9834263	47.021042	83839.95	11.520145
7.0	19.8	66.8	0.1	2.4	7537.1	0.6
19.1	54.0	182.3	0.2	6.4	20555.7	1.7
44.6	206.7	336.3	0.4	19.3	34779.0	4.0
13.2	38.8	127.6	0.2	4.4	15672.1	1.2
7.7	36.9	48.4	0.1	4.2	5247.3	0.7
7.0	32.0	52.1	0.1	3.1	5358.2	0.6
36.7	103.2	95.0	0.1	9.0	9726.2	3.3
45.1	177.6	272.7	0.3	24.9	25654.7	4.1
26.5	78.7	82.4	0.1	7.0	8786.5	2.4
34.3	102.0	106.8	0.1	9.0	11382.5	3.1
23.9	71.1	74.5	0.1	6.3	7937.8	2.2
9.2	45.7	58.5	0.1	5.1	6557.2	0.8
39.2	107.4	346.4	0.5	11.5	46632.7	3.5
313.64191	1075.9577	1849.8427	2.3972449	112.46611	205827.2	28.299408
5.3	24.7	39.8	0.0	2.3	4113.6	0.5
4.4	21.1	27.7	0.0	2.4	2998.5	0.4
5.3	23.2	41.8	0.0	2.3	3872.2	0.5
7.6	21.5	68.8	0.1	2.7	7038.2	0.7
6.6	29.3	49.2	0.1	2.8	4759.4	0.6
4.1	18.7	30.4	0.0	1.8	3125.6	0.4
1.0	5.0	6.4	0.0	0.6	715.3	0.1
6.6	19.7	20.6	0.0	1.7	2196.6	0.6
1.6	4.5	4.1	0.0	0.4	422.9	0.1
2.0	7.7	11.9	0.0	1.1	1115.4	0.2
44.39654	175.32052	300.60266	0.3482787	17.965806	30357.751	4.0058289
113.3	310.6	1001.5	1.5	33.4	134810.9	10.2
52.8	144.7	466.8	0.7	15.6	62827.0	4.8
10.7	128.2	13.0	0.2	2.0	20629.4	0.0
14.1	168.5	17.0	0.2	2.7	27117.6	0.0
27.1	104.1	355.5	0.5	10.1	48502.1	2.4
201.9	776.4	2651.7	3.6	75.5	361735.7	18.2
419.8888	1632.4853	4505.5696	6.7869205	139.20599	655622.68	35.64344
2039.0	8315.2	15976.7	22.0	792.4	2018123.1	181.7
			lbs/month			

Emissions, lbs/construction day						
VOC	CO	Nox	SOx	PM10/2.5	CO2	CH4
2.8	14.6	19.9	0.0	1.2	2412.1	0.3
0.8	3.8	4.9	0.0	0.4	545.0	0.1
2.2	8.8	13.6	0.0	1.2	1274.8	0.2
4.1	11.8	36.4	0.0	1.5	3288.1	0.4
3.8	18.8	28.7	0.0	1.6	3174.1	0.3
12.6	42.7	73.5	0.1	6.4	5567.4	1.1
1.2	5.6	9.0	0.0	0.5	926.0	0.1
6.3	67.2	61.8	0.1	2.7	12570.1	0.6
33.686572	173.31247	247.56495	0.3383612	15.55406	29757.615	3.0394853
0.5	2.6	4.0	0.0	0.2	442.9	0.0
1.4	4.1	13.1	0.0	0.5	1340.6	0.1
0.1	0.6	1.0	0.0	0.1	106.3	0.0
0.1	0.4	1.2	0.0	0.0	124.4	0.0
2.2381772	7.7505874	19.388791	0.0226634	0.8409452	2014.2204	0.2019472
0.6	1.8	6.1	0.0	0.2	746.3	0.1
9.0	27.0	87.3	0.1	2.9	11221.3	0.8
9.6562031	28.835446	93.345804	0.1185377	3.1398811	11967.58	0.8712637
0.4	1.8	3.8	0.0	0.1	999.1	0.0
0.5	1.5	5.1	0.0	0.2	574.3	0.0
0.6	2.6	4.1	0.0	0.3	415.3	0.1
0.7	3.1	4.8	0.0	0.4	482.2	0.1
0.1	0.7	0.9	0.0	0.1	102.2	0.0
1.0	2.9	2.7	0.0	0.3	271.9	0.1
1.5	6.1	9.3	0.0	0.9	876.4	0.1
2.2	6.5	6.8	0.0	0.6	727.5	0.2
1.2	3.3	10.8	0.0	0.4	1453.5	0.1
8.3882498	28.527644	48.253893	0.0677878	3.117195	5902.2746	0.7568584
0.5	1.5	5.1	0.0	0.2	574.3	0.0
0.9	4.1	6.3	0.0	0.5	643.0	0.1
0.2	0.6	2.1	0.0	0.1	309.6	0.0
0.2	0.8	1.0	0.0	0.1	113.5	0.0
0.6	1.7	1.7	0.0	0.1	185.4	0.1
0.6	1.7	1.7	0.0	0.1	185.4	0.1
0.9	2.7	2.8	0.0	0.2	299.5	0.1
0.4	1.1	1.0	0.0	0.1	100.7	0.0
0.9	2.4	7.8	0.0	0.3	1049.7	0.1
0.9	3.7	5.6	0.0	0.5	531.2	0.1
6.0798854	20.215367	35.289753	0.0468298	2.2390973	3992.3786	0.5485783
0.3	0.9	3.2	0.0	0.1	358.9	0.0
0.9	2.6	8.7	0.0	0.3	978.8	0.1
2.1	9.9	16.0	0.0	0.9	1656.1	0.2
0.6	1.8	6.1	0.0	0.2	746.3	0.1
0.4	1.8	2.3	0.0	0.2	249.9	0.0
0.3	1.5	2.5	0.0	0.1	255.2	0.0
1.7	4.9	4.5	0.0	0.4	463.2	0.2
2.1	8.5	13.0	0.0	1.2	1221.7	0.2
1.3	3.7	3.9	0.0	0.3	418.4	0.1
1.6	4.9	5.1	0.0	0.4	542.0	0.1
1.1	3.4	3.5	0.0	0.3	378.0	0.1
0.4	2.2	2.8	0.0	0.2	312.2	0.0
1.9	5.1	16.5	0.0	0.5	2220.6	0.2
14.935329	51.236083	88.087749	0.1141545	5.3555289	9801.2954	1.3475909
0.3	1.2	1.9	0.0	0.1	195.9	0.0
0.2	1.0	1.3	0.0	0.1	142.8	0.0
0.3	1.1	2.0	0.0	0.1	184.4	0.0
0.4	1.0	3.3	0.0	0.1	335.2	0.0
0.3	1.4	2.3	0.0	0.1	226.6	0.0
0.2	0.9	1.4	0.0	0.1	148.8	0.0
0.0	0.2	0.3	0.0	0.0	34.1	0.0
0.3	0.9	1.0	0.0	0.1	104.6	0.0
0.1	0.2	0.2	0.0	0.0	20.1	0.0
0.1	0.4	0.6	0.0	0.1	53.1	0.0
2.114121	8.3485961	14.314413	0.0165847	0.8555146	1445.6072	0.1907538
5.4	14.8	47.7	0.1	1.6	6419.6	0.5
2.5	6.9	22.2	0.0	0.7	2991.8	0.2
0.5	6.1	0.6	0.0	0.1	982.4	0.0
0.7	8.0	0.8	0.0	0.1	1291.3	0.0
1.3	5.0	16.9	0.0	0.5	2309.6	0.1
9.6	37.0	126.3	0.2	3.6	17225.5	0.9
19.994705	77.737395	214.55093	0.3231867	6.6288566	31220.128	1.6973067
97.1	396.0	760.8	1.0	37.7	96101.1	8.7
			lbs/day			

Gasoline Vehicle Conversion from Lbs/VMT to Lbs/Hp-hr

Type	HP	Fuel	Avg Speed Onsite mph	Avg VMT/hr	EMFAC V2.3, 2007					
					lbsVMT VOC	lbsVMT CO	lbsVMT Nox	lbsVMT SOx	lbsVMT PM10/2.5	lbsVMT CO2
Pickup Trucks	250	Gasoline	15	15	0.000567	0.00677	0.000684	0.00001	0.000107	1.0893
AWD Gators	25	Gasoline	15	15	0.000567	0.00677	0.000684	0.00001	0.000107	1.0893
	lbs/hr VOC	lbs/hr CO	lbs/hr Nox	lbs/hr SOx	lbs/hr PM10/2.5	lbs/hr CO2				
Pickup Trucks	0.008505	0.10155	0.01026	0.00015	0.001605	16.3395				
AWD Gators	0.008505	0.10155	0.01026	0.00015	0.001605	16.3395				
	lbs/hp-hr	lbs/hp-hr	lbs/hp-hr	lbs/hp-hr	lbs/hp-hr	lbs/hp-hr				
Pickup Trucks	0.00003402	0.0004062	0.00004104	0.0000006	0.00000642	0.065358				
AWD Gators	0.0003402	0.004062	0.0004104	0.000006	0.0000642	0.65358				

# **CONSTRUCTION PHASE - Site Prep (Grading) for Both Power Blocks and Solar Field Roads (All Phases)**

## **MRI Level 2 Analysis (Refs 1, 3-7)**

Acres Subject to Construction Grading/Earthwork Disturbance Activities:	337.2	
Max Acres Subject to Construction Disturbance Activities on any day:	34	
Emissions Factor for PM10 Uncontrolled, tons/acre/month:	0.0144	
PM2.5 fraction of PM10 (per CARB CEIDARS Profiles):	0.21	
Activity Levels:		
Hrs/Day:	10	
Days/Wk:	5	
Days/Month:	21	
Const Period, Months:	16	1.3 years
Const Period, Days:	336	
Wet Season Adjustment: (Per AP-42, Section 13.2.2, Figure 13.2.2-1, 12/03)		
Mean # days/year with rain > = 0.01 inch:	20	
Mean # months/yr with rain > = 0.01 inch:	0.67	
Adjusted Const Period, Months:	15.11	
Adjusted Const Period, Days:	309	

## **Controls for Fugitive Dust:**

Proposed watering cycle: 3 times per day

## **SCAQMD Mitigation Measures, Table XI-A, 4/07**

3 watering cycles/10 hour construction shift yields a 61% reduction, 2 watering cycles/10 hour shift should yield a 40%+ reduction. Speed control of onsite const traffic from 35 to 15 mph yields a 57% reduction (use 50% control as conservative in desert area).

Calculated % control based on mitigations proposed:	81	% control
Conservative control % used for emissions estimates:	80	% control
	0.2	release fraction

<b>Emissions: Controlled</b>	<b>PM10</b>	<b>PM2.5</b>
tons/month	0.098	0.021
tons/period	1.480	0.311
Max lbs/day	9.3	1.958

## **Soil Handling Emissions (Cut and Fill): (2)**

Total cu.yds of soil handled:	213067	Mean annual wind speed, mph:	7.8
Total tons of soil handled:	550991.262	Avg. Soil moisture, %:	5
Total days soil handled:	309	Avg. Soil density, tons/cu.yd:	1.3
Tons soil/day:	1781	k factor for PM10:	0.35
Control Eff, watering, %	80	Number of Drops per ton:	2
Release Fraction:	0.2	Calc 1 wind	1.783
		Calc 2 moisture	3.607
		Calc 3 int	0.494
Emissions:	PM10	PM2.5	
tons/period	0.03	0.01	
tons/month	0.00	0.00	
max lbs/day	0.20	0.04	
		Calc 4 PM10 lb/ton	0.0006
		PM2.5 fraction of PM10:	0.210

<b>Emissions Totals:</b>		<b>PM10</b>	<b>PM2.5</b>
	tons/period	1.5110	0.3173
	tons/month	0.1000	0.0210
	max lbs/day	9.52	2.00

**Methodology References:**

- (1) MRI Report, South Coast AQMD Project No. 95040, March 1996, Level 2 Analysis Procedure.  
MRI Report factor of 0.011 tons/acre/month is based on 168 hours per month of const activity.  
For an activity rate of 210 hrs/month, the adjusted EF would be 0.0144 tons/acre/month.
- (2) Soil Handling (Cut and Fill), EPA, AP-42, Section 13.2.4., 11/06, and Appendix E-2, Palen Solar PP, 8/09.
- (3) URBEMIS, Version 9.2.4, User's Manual Appendix A, page A-6.
- (4) CARB Area Source Methodology, Section 7.7, 9/02.
- (5) WRAP Fugitive Dust Handbook, 9/06.
- (6) USEPA, AP-42, Section 13.2.3, 2/10.
- (7) Estimating PM Emissions from Construction Operations, USEPA, MRI, 9/99.
- (8) Wind speed data for Blythe AP, 2002-2004.
- (9) Soil data: AECOM BSPP, App E.2, 8/09. DR-Air-3, 1-6-10, Silt content-18% avg
- (10) Soil Moisture; 5% avg, USGS, OFR-02-348, ADRS, 2002.



**CONSTRUCTION PHASE- Erection Phase for Both Power Blocks and Fields (No earthmoving activity)**

**MRI Level 2 Analysis (Refs 1, 3-7)**

Acres Subject to Construction Disturbance Activities:	260	
Max Acres Subject to Construction Disturbance Activities on any day:	26	
Emissions Factor for PM10 Uncontrolled, tons/acre/month:	0.023	
PM2.5 fraction of PM10 (per CARB CEIDARS Profiles):	0.21	
Activity Levels:		
Hrs/Day:	16	
Days/Wk:	5	
Days/Month:	21	
Const Period, Months:	30	2.5 years
Const Period, Days:	630	
Wet Season Adjustment: (Per AP-42, Section 13.2.2, Figure 13.2.2-1, 12/03)		
Mean # days/year with rain >= 0.01 inch:	20	
Mean # months/yr with rain >= 0.01 inch:	0.67	
Adjusted Const Period, Months:	28.33	
Adjusted Const Period, Days:	580	

**Controls for Fugitive Dust:**

Proposed watering cycle: 3 times per day

**SCAQMD Mitigation Measures, Table XI-A, 4/07**

3 watering cycles/10 hour construction shift yields a 61% reduction, 2 watering cycles/10 hour shift should yield a 40%+ reduction. Speed control of onsite const traffic from 35 to 15 mph yields a 57% reduction (use 50% control as conservative in desert area).

Calculated % control based on mitigations proposed:	81	% control
Conservative control % used for emissions estimates:	80	% control
	0.2	release fraction

<b>Emissions: Controlled</b>	<b>PM10</b>	<b>PM2.5</b>
tons/month	0.120	0.025
tons/period	3.389	0.712
Max lbs/day	11.4	2.392

**Soil Handling Emissions (Cut and Fill): (2)**

Total cu.yds of soil handled:	0	Mean annual wind speed, mph:	7.8
Total tons of soil handled:	0	Avg. Soil moisture, %:	5
Total days soil handled:	580	Avg. Soil density, tons/cu.yd:	1.3
Tons soil/day:	0	k factor for PM10:	0.35
Control Eff, watering, %	80	Number of Drops per ton:	4
Release Fraction:	0.2	Calc 1 wind	1.783
		Calc 2 moisture	3.607
		Calc 3 int	0.494
Emissions:	PM10	PM2.5	
tons/period	0.00	0.00	
tons/month	0.00	0.00	
max lbs/day	0.00	0.00	
		Calc 4 PM10 lb/ton	0.0006
		PM2.5 fraction of PM10:	0.210

<b>Emissions Totals:</b>		<b>PM10</b>	<b>PM2.5</b>
	tons/period	3.3887	0.7116
	tons/month	0.1196	0.0251
	max lbs/day	11.39	2.39

**Methodology References:**

- (1) MRI Report, South Coast AQMD Project No. 95040, March 1996, Level 2 Analysis Procedure.  
MRI Report factor of 0.011 tons/acre/month is based on 168 hours per month of const activity.  
For an activity rate of 336 hrs/month, the adjusted EF would be 0.023 tons/acre/month.
- (2) Soil Handling (Cut and Fill), EPA, AP-42, Section 13.2.4., 11/06, and Appendix E-2, Palen Solar PP, 8/09.
- (3) URBEMIS, Version 9.2.4, User's Manual Appendix A, page A-6.
- (4) CARB Area Source Methodology, Section 7.7, 9/02.
- (5) WRAP Fugitive Dust Handbook, 9/06.
- (6) USEPA, AP-42, Section 13.2.3, 2/10.
- (7) Estimating PM Emissions from Construction Operations, USEPA, MRI, 9/99.
- (8) Wind speed data for Blythe AP, 2002-2004.
- (9) Soil data: AECOM BSPP, App E.2, 8/09. DR-Air-3, 1-6-10, Silt content-18% avg
- (10) Soil Moisture; 5% avg, USGS, OFR-02-348, ADRS, 2002.



# CONSTRUCTION PHASE - Access Road Construction

## MRI Level 2 Analysis (Refs 1, 3-7)

Acres Subject to Construction Disturbance Activities:	7.6	1.25 mi length by 50 ft ROW
Max Acres Subject to Construction Disturbance Activities on any day:	1.00	
Emissions Factor for PM10 Uncontrolled, tons/acre/month:	0.0144	
PM2.5 fraction of PM10 (per CARB CEIDARS Profiles):	0.21	
Activity Levels:		
Hrs/Day:	10	
Days/Wk:	5	
Days/Month:	21	
Const Period, Months:	6	0.5 years
Const Period, Days:	126	
Wet Season Adjustment: (Per AP-42, Section 13.2.2, Figure 13.2.2-1, 12/03)		
Mean # days/year with rain >= 0.01 inch:	20	
Mean # months/yr with rain >= 0.01 inch:	0.67	
Adjusted Const Period, Months:	5.67	
Adjusted Const Period, Days:	116	

## Controls for Fugitive Dust:

Proposed watering cycle: 3 times per day

## SCAQMD Mitigation Measures, Table XI-A, 4/07

3 watering cycles/10 hour construction shift yields a 61% reduction, 2 watering cycles/10 hour shift should yield a 40%+ reduction.

Speed control of onsite const traffic from 35 to 15 mph yields a 57% reduction (use 50% control as conservative in desert area).

Calculated % control based on mitigations proposed:	81	% control
Conservative control % used for emissions estimates:	80	% control
	0.2	release fraction

<b>Emissions: Controlled</b>	PM10	PM2.5
tons/month	0.003	0.001
tons/period	0.016	0.003
Max lbs/day	0.3	0.058

## Soil Handling Emissions (Cut and Fill): (2)

Total cu.yds of soil handled:	0	Mean annual wind speed, mph:	7.8
Total tons of soil handled:	0	Avg. Soil moisture, %:	5
Total days soil handled:	116	Avg. Soil density, tons/cu.yd:	1.3
Tons soil/day:	0	k factor for PM10:	0.35
Control Eff, watering, %	80	Number of Drops per ton:	2
Release Fraction:	0.2	Calc 1 wind	1.783
		Calc 2 moisture	3.607
Emissions:	PM10	PM2.5	
tons/period	0.00	0.00	
tons/month	0.00	0.00	
max lbs/day	0.00	0.00	
		Calc 3 int	0.494
		Calc 4 PM10 lb/ton	0.0006
		PM2.5 fraction of PM10:	0.210

## Emissions Totals:

	PM10	PM2.5
tons/period	0.0163	0.0034
tons/month	0.0029	0.0006
max lbs/day	0.27	0.06

**Methodology References:**

- (1) MRI Report, South Coast AQMD Project No. 95040, March 1996, Level 2 Analysis Procedure.  
MRI Report factor of 0.011 tons/acre/month is based on 168 hours per month of const activity.  
For an activity rate of 210 hrs/month, the adjusted EF would be 0.0144 tons/acre/month.
- (2) Soil Handling (Cut and Fill), EPA, AP-42, Section 13.2.4., 11/06, and Appendix E-2, Palen Solar PP, 8/09.
- (3) URBEMIS, Version 9.2.4, User's Manual Appendix A, page A-6.
- (4) CARB Area Source Methodology, Section 7.7, 9/02.
- (5) WRAP Fugitive Dust Handbook, 9/06.
- (6) USEPA, AP-42, Section 13.2.3, 2/10.
- (7) Estimating PM Emissions from Construction Operations, USEPA, MRI, 9/99.
- (8) Wind speed data for Blythe AP, 2002-2004.
- (9) Soil data: AECOM BSPP, App E.2, 8/09. DR-Air-3, 1-6-10, Silt content-18% avg
- (10) Soil Moisture; 5% avg, USGS, OFR-02-348, ADRS, 2002.
- (11) paved road will be 2-12 ft lanes, 24 ft wide with minimal shoulders in a 50 ft ROW

# CONSTRUCTION PHASE - Underground Gas Line

## MRI Level 2 Analysis (Refs 1, 3-7)

Acres Subject to Construction Disturbance Activities:	3.82	
Max Acres Subject to Construction Disturbance Activities on any day:	0.38	
Emissions Factor for PM10 Uncontrolled, tons/acre/month:	0.0144	
PM2.5 fraction of PM10 (per CARB CEIDARS Profiles):	0.21	
Activity Levels:		
Hrs/Day:	10	
Days/Wk:	5	
Days/Month:	21	
Const Period, Months:	8	0.7 years
Const Period, Days:	168	
Wet Season Adjustment: (Per AP-42, Section 13.2.2, Figure 13.2.2-1, 12/03)		
Mean # days/year with rain >= 0.01 inch:	20	
Mean # months/yr with rain >= 0.01 inch:	0.67	
Adjusted Const Period, Months:	7.56	
Adjusted Const Period, Days:	155	

## Controls for Fugitive Dust:

Proposed watering cycle: 3 times per day

## SCAQMD Mitigation Measures, Table XI-A, 4/07

3 watering cycles/10 hour construction shift yields a 61% reduction, 2 watering cycles/10 hour shift should yield a 40%+ reduction.

Speed control of onsite const traffic from 35 to 15 mph yields a 57% reduction (use 50% control as conservative in desert area).

Calculated % control based on mitigations proposed:	81	% control
Conservative control % used for emissions estimates:	80	% control
	0.2	release fraction

Emissions: Controlled	PM10	PM2.5
tons/month	0.001	0.000
tons/period	0.008	0.002
Max lbs/day	0.1	0.022

## Soil Handling Emissions (Cut and Fill): (2)

Total cu.yds of soil handled:	5400	Mean annual wind speed, mph:	7.8
Total tons of soil handled:	13964.4	Avg. Soil moisture, %:	5
Total days soil handled:	155	Avg. Soil density, tons/cu.yd:	1.3
Tons soil/day:	90	k factor for PM10:	0.35
Control Eff, watering, %	80	Number of Drops per ton:	2
Release Fraction:	0.2	Calc 1 wind	1.783
		Calc 2 moisture	3.607
		Calc 3 int	0.494
Emissions: PM10 PM2.5		Calc 4 PM10 lb/ton	0.0006
tons/period 0.00 0.00		PM2.5 fraction of PM10:	0.210
tons/month 0.00 0.00			
max lbs/day 0.01 0.00			

Fraction of gas line onsite: 0.97

Emissions Totals:	PM10	PM2.5
tons/period	0.0091	0.0019
tons/month	0.0012	0.0003
max lbs/day	0.11	0.02

**Methodology References:**

- (1) MRI Report, South Coast AQMD Project No. 95040, March 1996, Level 2 Analysis Procedure.  
MRI Report factor of 0.011 tons/acre/month is based on 168 hours per month of const activity.  
For an activity rate of 210 hrs/month, the adjusted EF would be 0.0144 tons/acre/month.
- (2) Soil Handling (Cut and Fill), EPA, AP-42, Section 13.2.4., 11/06, and Appendix E-2, Palen Solar PP, 8/09.
- (3) URBEMIS, Version 9.2.4, User's Manual Appendix A, page A-6.
- (4) CARB Area Source Methodology, Section 7.7, 9/02.
- (5) WRAP Fugitive Dust Handbook, 9/06.
- (6) USEPA, AP-42, Section 13.2.3, 2/10.
- (7) Estimating PM Emissions from Construction Operations, USEPA, MRI, 9/99.
- (8) Wind speed data for Blythe AP, 2002-2004.
- (9) Soil data: AECOM BSPP, App E.2, 8/09. DR-Air-3, 1-6-10, Silt content-18% avg
- (10) Soil Moisture; 5% avg, USGS, OFR-02-348, ADRS, 2002.
- (11) acreage based on trench ROW dimensions, cut and fill based on trench dimensions

# CONSTRUCTION PHASE - Underground T-Line

## MRI Level 2 Analysis (Refs 1, 3-7)

Acres Subject to Construction Disturbance Activities:	3.35	
Max Acres Subject to Construction Disturbance Activities on any day:	0.34	
Emissions Factor for PM10 Uncontrolled, tons/acre/month:	0.0144	
PM2.5 fraction of PM10 (per CARB CEIDARS Profiles):	0.21	
Activity Levels:		
Hrs/Day:	10	
Days/Wk:	5	
Days/Month:	21	
Const Period, Months:	11	0.9 years
Const Period, Days:	231	
Wet Season Adjustment: (Per AP-42, Section 13.2.2, Figure 13.2.2-1, 12/03)		
Mean # days/year with rain >= 0.01 inch:	20	
Mean # months/yr with rain >= 0.01 inch:	0.67	
Adjusted Const Period, Months:	10.39	
Adjusted Const Period, Days:	213	

## Controls for Fugitive Dust:

Proposed watering cycle: 3 times per day

## SCAQMD Mitigation Measures, Table XI-A, 4/07

3 watering cycles/10 hour construction shift yields a 61% reduction, 2 watering cycles/10 hour shift should yield a 40%+ reduction. Speed control of onsite const traffic from 35 to 15 mph yields a 57% reduction (use 50% control as conservative in desert area).

Calculated % control based on mitigations proposed:	81	% control
Conservative control % used for emissions estimates:	80	% control
	0.2	release fraction

<b>Emissions: Controlled</b>	PM10	PM2.5
tons/month	0.001	0.000
tons/period	0.010	0.002
Max lbs/day	0.1	0.020

## Soil Handling Emissions (Cut and Fill): (2)

Total cu.yds of soil handled:	49363	Mean annual wind speed, mph:	7.8
Total tons of soil handled:	127652.718	Avg. Soil moisture, %:	5
Total days soil handled:	213	Avg. Soil density, tons/cu.yd:	1.3
Tons soil/day:	600	k factor for PM10:	0.35
Control Eff, watering, %	80	Number of Drops per ton:	2
Release Fraction:	0.2	Calc 1 wind	1.783
		Calc 2 moisture	3.607
		Calc 3 int	0.494
		Calc 4 PM10 lb/ton	0.0006
		PM2.5 fraction of PM10:	0.210
Emissions:	PM10	PM2.5	
tons/period	0.01	0.00	
tons/month	0.00	0.00	
max lbs/day	0.07	0.01	

Fraction of T-line onsite: 1.00

<b>Emissions Totals:</b>		PM10	PM2.5
	tons/period	0.0174	0.0037
	tons/month	0.0017	0.0004
	max lbs/day	0.16	0.03

**Methodology References:**

- (1) MRI Report, South Coast AQMD Project No. 95040, March 1996, Level 2 Analysis Procedure.  
MRI Report factor of 0.011 tons/acre/month is based on 168 hours per month of const activity.  
For an activity rate of 210 hrs/month, the adjusted EF would be 0.0144 tons/acre/month.
- (2) Soil Handling (Cut and Fill), EPA, AP-42, Section 13.2.4., 11/06, and Appendix E-2, Palen Solar PP, 8/09.
- (3) URBEMIS, Version 9.2.4, User's Manual Appendix A, page A-6.
- (4) CARB Area Source Methodology, Section 7.7, 9/02.
- (5) WRAP Fugitive Dust Handbook, 9/06.
- (6) USEPA, AP-42, Section 13.2.3, 2/10.
- (7) Estimating PM Emissions from Construction Operations, USEPA, MRI, 9/99.
- (8) Wind speed data for Blythe AP, 2002-2004.
- (9) Soil data: AECOM BSPP, App E.2, 8/09. DR-Air-3, 1-6-10, Silt content-18% avg
- (10) Soil Moisture; 5% avg, USGS, OFR-02-348, ADRS, 2002.
- (11) acreage based on trench ROW dimensions, cut and fill based on trench dimensions



## OFFSITE PAVED ROAD FUGITIVE DUST EMISSIONS

(associated with delivery truck and worker vehicle traffic on I-10 and plant access road)

Average mileage for construction related vehicles:	75	miles, roundtrip distance***		
Avg weight of vehicular equipment on road:	3.5	tons (range 2 - 42 tons)		
Road surface silt loading factor:	0.03	g/m2 (range 0.03 - 400 g/m2)		
		Limited Access Freeway > 10,000 ADT (I-10)		
Particle size multiplier factors:	PM10	0.016	lb/VMT	
	PM2.5	0.0024	lb/VMT	
C factors (brake and tire wear):	PM10	0.00047	lb/VMT	
	PM2.5	0.00036	lb/VMT	
Avg vehicle speed on road:	65	mph		
Number of vehicles per day:	621	*	VMT/day:	46575
			VMT/month:	978075
Number of work days per month:	21		VMT/period:	30515940
	Total vehicles per month:	13041		
Number of work months:	31.2	adjusted for precip events		
	Total vehicles per const period:	406879.2		
	PM10			
Calc 1	0.035			
Calc 2	1.131			
Calc 3	0.0002	lb/VMT		
Emissions	PM10	PM2.5		
lbs/day	7.40	1.25		
lbs/month	155.37	26.26		
lbs/period	4847.61	819.25		
tons/period	2.42	0.41		

\*see vehicle total on Weight tab

EPA, AP-42, Section 13.2.1, March 2006, updated 9/2008.

PM2.5 fraction of PM10 per CARB CEIDARs is 0.169

\*\*\* Note: avg roundtrip distance traveled by delivery or worker vehicles on limited access freeways (I-10)

Delivery Route: from Blythe urban area or Blythe ATSF railyard to site, includes plant paved access road

# **ONSITE PAVED ROAD FUGITIVE DUST EMISSIONS**

(associated with construction equipment traffic)

Length of Paved Road used for/by Construction Access:	6.3	miles*		
Avg weight of construction vehicular equipment on road:	10	tons (range 2 - 42 tons)		
Road surface silt loading factor:	0.06	g/m2 (range 0.03 - 400 g/m2)		
Particle size multiplier factors:	PM10	0.016	lb/VMT	
	PM2.5	0.0024	lb/VMT	
C factors (brake and tire wear):	PM10	0.00047	lb/VMT	
	PM2.5	0.00036	lb/VMT	
Avg construction vehicle speed on onsite road:	15	mph (range 10-55 mph)		
Number of construction vehicles per day:	80	**	VMT/day:	504
			VMT/month:	10584
Number of construction work days per month:	21		VMT/period:	330220.8
Total vehicles per month:	1680			
Number of construction work months:	31.2	adjusted for precip events		
Total vehicles per const period:	52416			
	PM10			
Calc 1	0.060			
Calc 2	2.620			
Calc 3	0.0021	lb/VMT		
<b>Emissions</b>	PM10	PM2.5		
lbs/day	1.04	0.18		
lbs/month	21.86	3.70		
lbs/period	682.18	115.29		
tons/period	0.34	0.06		

\*total mileage of onsite paved roads. Since these roads will be used to access the power block areas and portions of the heliostat fields under installation, it was assumed that all of these roads would be used on an average daily basis.

\*\* delivery vehicles plus onsite const support equipment, worker vehicles will not be traversing the site

EPA, AP-42, Section 13.2.1, March 2006, updated 9/2008.

PM2.5 fraction of PM10 per CARB CEIDARs is 0.169



## Fugitive Dust from Wind Erosion of Soil Storage Piles

### Grading Phase Only for both Power Blocks and Solar Fields

Avg acres of soil storage piles exposed per day:	5	*
Soil silt content, %:	18.3	0.183
Number of days/year with precipitation > 0.01 inches:	20	
Annual % of time wind speed greater than 12 mph:	20.6	0.206
Watering control efficiency, %:	80	0.8
PM10 aerodynamic factor:	0.5	
PM2.5 aerodynamic factor:	0.2	
Total construction period exposure time, days:	336	

	lb/acre-day	lbs/day	lbs/period	tons/period
PM10	0.104	0.520	174.6	0.087
PM2.5	0.042	0.208	69.9	0.035

MDAQMD, Emissions Inventory Guidance, Mineral Handling and Processing Industries, April 2000.

USEPA, AP-42, Section 13.2.2, Unpaved Roads, Figure 13.2.2-1, Thornethwaite Precipitation Data.

\*soil storage areas only, open cut and fill areas are not soil storage areas.

## ONSITE UNPAVED ROAD FUGITIVE DUST

Length of Unpaved Road used for/by Construction Access: (in the heliostat fields)	2	miles*			
Avg weight of construction vehicular equipment on road:	10	tons (range 2 - 42 tons)			
Road surface silt content:	18	% (range 1.8 - 35%)			
Road surface material moisture content:	5	% (range 0.03 - 13%)			
		k	a	c	d
Particle size multiplier factors:	PM10	1.8	1	0.2	0.5
	PM2.5	0.18	1	0.2	0.5
C factors (brake and tire wear):	PM10	0.00047	lb/VMT		
	PM2.5	0.00036	lb/VMT		
Avg construction vehicle speed on road:	5	mph (range 5-55 mph)			
Number of construction vehicles per day:	25	**	VTM/day:	50	
			VTM/month:	1050	
Number of construction work days per month:	21		VTM/period:	29746.5	
Total vehicles per month:	525				
Number of construction work months:	28.33	adjusted for precipitation events			
Total vehicles per const period:	14873.25				
Control reduction due to watering, speed control, etc. =	80				
	0.8				
Release Fraction =	0.2				
	PM10	PM2.5	Emissions	PM10	PM2.5
Calc 1	1.500	1.500	lbs/day	6.95	0.69
Calc 2	0.408	0.408	lbs/month	145.95	14.53
Calc 3	1.585	1.585	lbs/period	4134.86	411.62
Calc 4	0.695	0.070	tons/period	2.07	0.21
Uncontrolled lb/VMT	0.695	0.069			

EPA, AP-42, Section 13.2.2, March 2006

Soil Moisture; 5% avg, USGS, OFR-02-348, ADRS, 2002.

Soil data: AECOM BSPP, App E.2, 8/09. DR-Air-3, 1-6-10, Silt content-18% avg, for road sfc used 8.5% per EPA-AP42

\*total mileage of onsite unpaved roads is 19.8 miles, but less than 10% will be used on any given day during installation

\*\* heliostat installation equipment, avg daily value

## OFFSITE UNPAVED ROAD FUGITIVE DUST

Length of Unpaved Road used for/by Construction Access:	0	miles*			
Avg weight of construction vehicular equipment on road:	0	tons (range 2 - 42 tons)			
Road surface silt content:	18	% (range 1.8 - 35%), rolled gravel surface			
Road surface material moisture content:	5	% (range 0.03 - 13%)			
Particle size multiplier factors:	k	a	c	d	
	PM10	1.8	1	0.2	0.5
	PM2.5	0.18	1	0.2	0.5
C factors (brake and tire wear):	PM10	0.00047	lb/VMT		
	PM2.5	0.00036	lb/VMT		
Avg construction vehicle speed on road:	15	mph (range 10-55 mph)			
Number of construction vehicles per day:	0	**	VTM/day:	0	
			VTM/month:	0	
Number of construction work days per month:	0		VTM/period:	0	
Total vehicles per month:	0				
Number of construction work months:	0				
Total vehicles per const period:	0				
Control reduction due to watering, speed control, etc. =	80				
	0.8				
Release Fraction =	0.2				

	PM10	PM2.5	Emissions	PM10	PM2.5
Calc 1	1.500	1.500	lbs/day	0.00	0.00
Calc 2	0.707	0.707	lbs/month	0.00	0.00
Calc 3	1.585	1.585	lbs/period	0.00	0.00
Calc 4	1.205	0.120	tons/period	0.00	0.00
Uncontrolled lb/VMT	1.204	0.120			

EPA, AP-42, Section 13.2.2, March 2006

Soil Moisture; 5% avg, USGS, OFR-02-348, ADRS, 2002.

Soil data: AECOM BSPP, App E.2, 8/09. DR-Air-3, 1-6-10, Silt content-18% avg

\*no offsite unpaved roads will be used during construction

\*\* delivery and worker vehicles plus support staff

# CONSTRUCTION PHASE - Trackout Emissions

Paved Road Length (miles):	0.1	estimated roundtrip trackout distance			
Daily # of Vehicles:	50				
Avg Vehicle Weight (tons):	23.0		PM10	PM2.5*	
Total Unadjusted VMT/day	5.0		0.361		
Particle Size Multipliers	PM10		5.101		
lb/VMT	0.023		0.008	0.0014	lb/VMT
C factor, lb/VMT	0.00047		0.293	0.0496	lbs/day
Road Sfc Silt Loading (g/m <sup>2</sup> ):	0.56	local X 2	0.003	0.0005	tons/month
# of Active Trackout Points:	1	**	0.10	0.0162	tons/period
Added Trackout Miles:	PM10				
Trackout VMT/day:	30		<i>Default Silt Load Values for Paved Road Types</i>		
Final Adjusted VMT/day	35		Freeway	0.02 g/m2	
Final Adjusted VMT/month	735		Arterial	0.036 g/m2	
Final Adjusted VMT/period	22932		Collector	0.036 g/m2	
Construction days/month:	21		Local	0.28 g/m2	
Adj. Construction months/period:	31.20		Rural	1.6 g/m2	
Control Applied to Trackout:	Sweeping and Cleaning (water washing)				
Control Efficiency, %	80	0.8	Release Factor =	0.2	

\* PM2.5 fraction of PM10 assumed to be 0.169 (CARB CEIDARS updated fraction values) for paved roads.

\*\* 1 controlled ingress/egress point is planned for site construction

EPA, AP-42, Section 13.2.1, Proposed revisions dated 9/2008.

Use silt loading factor from default values for road type if no site specific data is available.

Trackout effects approximately 0.05 mi. of roadway arriving and departing from the site access point.

Plant access road will be paved prior to main site construction period.

Vehicle count = delivery trucks plus 10 misc support vehicles X 2

Worker vehicles not counted for trackout, as they do not access main site.

## Onsite Concrete Batch Plant Emissions Estimates

Ref: AP-42, Section 11.12, June 2006

EFs from Table 11.12-6, Central Mix Plant Type

Months concrete batch plant onsite:	14	months 4-17
Avg workdays per month:	21	
Total concrete production workdays/period:	294	
Total deliveries per period:	3488	
Avg truck capacity, cu.yds:	9	
Total concrete produced onsite per period:	31392	cu.yds.
Proposed controls: water spray, drop point enclosures, covered conveyors		
Controlled PM10 EF for raw materials input:	0.0153	lbs/cu.yd
Central Mix Plant EF:	0.0043146	lbs/cu.yd Eq. 11.12-2

Total EF: 0.0196 lbs/cu.yd.

			PM2.5
Period PM10 Emissions:	615.7	lbs	62.8
	0.31	tons	0.03
			PM2.5
Avg daily PM10 Emissions:	2.09	lbs	0.21
Total site concrete requirements:			58000 cu.yds.
Onsite:	31392	cu.yds.	
Offsite:	26608	cu.yds.	

# CONSTRUCTION PHASE - Truck Hauling/Delivery and Site Support Vehicle Emissions

## All Phases

### Delivery/Hauling Vehicle Use Rates

			Emissions Factors (lbs/vmt)							
Delivery Roundtrip Distance:	75	miles	NOx	CO	VOC	SOx	PM10	CO2	HDDT	
Const Days per Period:	693		0.020568	0.006521	0.001482	0.000037	0.000958	4.0073		
Avg Deliveries per Day:	15		0.001246	0.00818	0.000772	0.000015	0.000108	1.4979	MDGT	
Fraction of Deliveries-Diesel:	0.85	HDDT	Daily Emissions (lbs)							
Fraction of Deliveries-Gas:	0.15	MDGT	NOx	CO	VOC	SOx	PM10	CO2	PM2.5	
Total Delivery VMT:	779625		19.668	6.236	1.417	0.035	0.916	3831.981	0.908	HDDT
Total Daily VMT-Diesel	956		0.210	1.380	0.130	0.003	0.018	252.771	0.018	MDGT
Total Daily VMT-Gasoline	169		Tons per Const Period							
Total Period VMT-Diesel	662681.25		6.815	2.161	0.491	0.012	0.317	1327.8	0.315	HDDT
Total Period VMT-Gasoline	116943.75		0.073	0.478	0.045	0.001	0.006	87.6	0.006	MDGT

### Construction Site Support Vehicle Use Rates (LDTs)

			Daily Emissions, lbs							
Gasoline Vehicle VMT Period:	166320		NOx	CO	VOC	SOx	PM10	CO2		PM2.5
Avg Daily Gasoline VMT:	240		0.000684	0.00677	0.000567	0.00001	0.000107	1.0893	lbs/vmt*	LDT gasoline
Diesel Vehicle VMT Period:	34650		0.000035	0.000013	0.000002	0.000001	0.000002	0.0084	lbs/vmt*	LDT diesel
Avg Daily Diesel VMT:	50		0.1642	1.6248	0.1361	0.0024	0.0257	261.4320	lbs/day	gasoline
Total Phase Const Days:	693		0.0018	0.0007	0.0001	0.0001	0.0001	0.4200	lbs/day	diesel
			Tons per Const Period							
Ref: Riverside County, Emfac 2007, V2.3, Nov 2006			0.0569	0.5630	0.0472	0.0008	0.0089	90.6	tons/period	gasoline
On-Road Heavy Duty Diesels (1970-2014)			0.0006	0.0002	0.0000	0.0000	0.0000	0.1	tons/period	diesel
On Road Medium Duty Gas (1970-2014)										
LDTs (1970-2014)										

## Notes \*\*\*

VMT for delivery/hauling for all vehicles includes: (1) materials deliveries to site, (2) materials removal from site, other VMT as specified below.

Support Vehicle VMT: best estimate at time of filing, 8 gasoline LDTs at 30 miles per day each, and 2 diesel LDTs at 25 miles per day each.

Delivery Route: Blythe urban or railyard area to site, 75 miles roundtrip.

CARB-CEIDARS, Updated Fractions for PM Profiles: PM2.5 = 0.991 of PM10 for Diesel Exhaust, and 0.998 for Gasoline Vehicles.

Const days per period: 21 days per month at 33 months = 693

**CONSTRUCTION PHASE - Worker Travel - Emissions****All Phases****Worker Travel to Site**

Avg Occupancy/Vehicle:	1
Avg Roundtrip Distance, miles:	75
Avg # of Worker Vehicles, per day:	596 *
Avg Daily Worker VMT:	44700
Max # of Worker Vehicles, per day:	1380 *
Max Daily Worker VMT:	103500
Total Const Days:	693
Total Const Period Worker VMT:	30977100

Ref: Riverside County, Emfac 2007, V2.3, Nov 2006

On Road Vehicles (1970-2014)

LDP/LDT Weighted Avg Efs

		Emissions Factors (lbs/VMT)						
		NOx	CO	VOC	SOx	PM10	CO2	
		0.00049	0.00548	0.00047	0.00001	0.00009	0.95934	
		Daily Emissions (lbs)						
		NOx	CO	VOC	SOx	PM10	CO2	PM2.5
	Avg	21.90	244.96	21.01	0.45	4.02	42882.50	4.01
	Max	50.72	567.18	48.65	1.04	9.32	99291.69	9.30
		Tons per Const Period						
	Avg	7.589	84.877	7.280	0.155	1.394	14858.8	1.391

**Worker Travel by Busing from Staging Area**

Total Bus VMT/Const Period:	0	Bus Round Trips/Day:	0 max
Avg Bus VMT/Const Day:	0	Bus Occupancy/Trip:	0
Max Bus VMT/Const Day:	0		
Distance to site from Bus staging area:	0 miles (roundtrip)		
(AFC Traffic and Transportation Section)			

Ref: Riverside County, Emfac 2007, V2.3, Nov 2006

On Road Vehicles (1970-2014)

Bus Carriers

		Emissions Factors (lbs/VMT)						
		NOx	CO	VOC	SOx	PM10	CO2	
		0.019574	0.033191	0.003404	0.000426	0.000426	3.4043	
		Daily Emissions (lbs)						
		NOx	CO	VOC	SOx	PM10	CO2	PM2.5
	Avg	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Tons per Const Period						
	Avg	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Round trip distance: 75 miles from the Blythe urban area.



## CO2e Emissions Estimates

### Total All Construction Phases

*For CO2 Estimated Emissions Only*

1551  
Total CO2 emissions from diesel combustion: 34629.9 tons/period

Total CO2 emissions from gasoline combustion: 15037 tons/period

Approximate methane fraction of CO2 for diesel combustion: 0.000051

Approximate N2O fraction of CO2 for diesel combustion: 0.000032

Approximate methane fraction of CO2 for gasoline combustion: 0.000213

Approximate N2O fraction of CO2 for gasoline combustion: 0.000113

Estimated methane from diesel combustion: 1.7661249 tons/period

Estimated N2O from diesel combustion: 1.1081568 tons/period

Estimated methane from gasoline combustion: 3.202881 tons/period

Estimated N2O from gasoline combustion: 1.699181 tons/period

Estimated methane CO2e from diesel combustion: 37.088623 tons/period

Estimated N2O CO2e from diesel combustion: 343.52861 tons/period

Estimated methane CO2e from gasoline combustion: 67.260501 tons/period

Estimated N2O CO2e from gasoline combustion: 526.74611 tons/period

**Partial CO2e emissions from construction: 50642 tons/period**

*For GHG Where All Species are Estimated*

CO2 0 tons/period

CH4 3 tons/period

N2O 0 tons/period

Adjusted GWP Rates

CO2 0 tons/period

CH4 63 tons/period

N2O 0 tons/period

CO2e 63 tons/period

**Total CO2e emissions from construction: 50705 tons/period**  
46095 metric tons/period

CCAR General Protocol, January 2009, Version 3.1.

IPCC SAR values for methane and N2O.



# **Average Vehicle Weight Estimate for Construction Period**

Vehicle Type	Weight tons	# Vehicles per day	Frac. of total vehicles	
Passenger LDP/LDT	2.5	606	0.953	Worker and support travel vehicles
HDD Loaded	35	13	0.020	
HDD Unloaded	15	13	0.020	Materials delivery trucks, service
MDGT Loaded	15	2	0.003	trucks, fuel trucks, other misc trucks.
MDGT Unloaded	5	2	0.003	
		636	1.000	
Vehicle Total		621		

**Weighted Avg Vehicle Weight, tons : 3.5**

Ref: AP-42, Section 13.2.2, 11/06, mean vehicle weight guidance, p.13.2.2-6.

Delivery Vehicles Only			
HDD Loaded	35	13	0.433
HDD Unloaded	15	13	0.433
MDGT Loaded	15	2	0.067
MDGT Unloaded	5	2	0.067
		30	1

**Weighted Avg Vehicle Weight, tons : 23**

# Fleet Average Emission Factors (Diesel)

2013

Air Basin SC

Equipment	MaxHP	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	LBS/HP-HR						
		ROG	CO	NOX	SOX	PM	CO2	CH4	ROG	CO	NOX	SOX	PM	CO2	CH4
Aerial Lifts	15	0.0101	0.0528	0.0637	0.0001	0.0027	8.7	0.0009	0.0007	0.0035	0.0042	0.000009	0.0002	0.5768	0.000081
	25	0.0166	0.0503	0.0937	0.0001	0.0051	11.0	0.0015	0.0007	0.0020	0.0037	0.000006	0.0002	0.4384	0.000060
	50	0.0592	0.1757	0.1840	0.0003	0.0156	19.6	0.0053	0.0012	0.0035	0.0037	0.000005	0.0003	0.3923	0.000107
	120	0.0558	0.2425	0.3758	0.0004	0.0299	38.1	0.0050	0.0005	0.0020	0.0031	0.000004	0.0002	0.3173	0.000042
	500	0.1191	0.4671	1.5310	0.0021	0.0448	213	0.0107	0.0002	0.0009	0.0031	0.000004	0.0001	0.4257	0.000021
	750	0.2221	0.8443	2.8534	0.0039	0.0825	385	0.0200	0.0003	0.0011	0.0038	0.000005	0.0001	0.5130	0.000027
Aerial Lifts Total		0.0529	0.1925	0.3059	0.0004	0.0202	34.7	0.0048							
Air Compressors	15	0.0122	0.0484	0.0732	0.0001	0.0048	7.2	0.0011	0.0008	0.0032	0.0049	0.000007	0.0003	0.4815	0.000073
	25	0.0266	0.0744	0.1306	0.0002	0.0081	14.4	0.0024	0.0011	0.0030	0.0052	0.000007	0.0003	0.5778	0.000096
	50	0.0921	0.2546	0.2221	0.0003	0.0220	22.3	0.0083	0.0018	0.0051	0.0044	0.000006	0.0004	0.4454	0.000166
	120	0.0825	0.3251	0.4991	0.0006	0.0456	47.0	0.0074	0.0007	0.0027	0.0042	0.000005	0.0004	0.3913	0.000062
	175	0.1059	0.5054	0.8385	0.0010	0.0472	88.5	0.0096	0.0006	0.0029	0.0048	0.000006	0.0003	0.5056	0.000055
	250	0.1007	0.2955	1.1320	0.0015	0.0347	131	0.0091	0.0004	0.0012	0.0045	0.000006	0.0001	0.5249	0.000036
	500	0.1626	0.5399	1.7639	0.0023	0.0570	232	0.0147	0.0003	0.0011	0.0035	0.000005	0.0001	0.4635	0.000029
	750	0.2547	0.8344	2.8139	0.0036	0.0898	358	0.0230	0.0003	0.0011	0.0038	0.000005	0.0001	0.4775	0.000031
	1000	0.4190	1.4213	5.0841	0.0049	0.1474	486	0.0378	0.0004	0.0014	0.0051	0.000005	0.0001	0.4864	0.000038
Air Compressors Total		0.0913	0.3376	0.6065	0.0007	0.0434	63.6	0.0082							
Bore/Drill Rigs	15	0.0120	0.0632	0.0754	0.0002	0.0029	10.3	0.0011	0.0008	0.0042	0.0050	0.000011	0.0002	0.6897	0.000072
	25	0.0193	0.0658	0.1226	0.0002	0.0049	16.0	0.0017	0.0008	0.0026	0.0049	0.000008	0.0002	0.6395	0.000070
	50	0.0289	0.2282	0.2568	0.0004	0.0120	31.0	0.0026	0.0006	0.0046	0.0051	0.000008	0.0002	0.6207	0.000052
	120	0.0447	0.4698	0.4583	0.0009	0.0257	77.1	0.0040	0.0004	0.0039	0.0038	0.000008	0.0002	0.6427	0.000034
	175	0.0704	0.7538	0.6931	0.0016	0.0302	141	0.0063	0.0004	0.0043	0.0040	0.000009	0.0002	0.8062	0.000036
	250	0.0795	0.3429	0.7632	0.0021	0.0221	188	0.0072	0.0003	0.0014	0.0031	0.000008	0.0001	0.7524	0.000029
	500	0.1295	0.5517	1.1717	0.0031	0.0361	311	0.0117	0.0003	0.0011	0.0023	0.000006	0.0001	0.6226	0.000023
	750	0.2565	1.0899	2.3376	0.0062	0.0715	615	0.0231	0.0003	0.0015	0.0031	0.000008	0.0001	0.8201	0.000031
	1000	0.4163	1.6675	5.9553	0.0093	0.1544	928	0.0376	0.0004	0.0017	0.0060	0.000009	0.0002	0.9283	0.000038
Bore/Drill Rigs Total		0.0786	0.5044	0.8125	0.0017	0.0302	165	0.0071							
Cement and Mortar	15	0.0074	0.0386	0.0470	0.0001	0.0021	6.3	0.0007	0.0005	0.0026	0.0031	0.000007	0.0001	0.4213	0.000045
	25	0.0270	0.0813	0.1510	0.0002	0.0083	17.6	0.0024	0.0011	0.0033	0.0060	0.000009	0.0003	0.7022	0.000098
Cement and Mortar Mixers Total		0.0091	0.0421	0.0556	0.0001	0.0026	7.2	0.0008							
Concrete/Industrial	25	0.0199	0.0678	0.1257	0.0002	0.0049	16.5	0.0018	0.0008	0.0027	0.0050	0.000008	0.0002	0.6591	0.000072
	50	0.0955	0.2918	0.2858	0.0004	0.0247	30.2	0.0086	0.0019	0.0058	0.0057	0.000008	0.0005	0.6042	0.000172
	120	0.1065	0.4836	0.7154	0.0009	0.0589	74.1	0.0096	0.0009	0.0040	0.0060	0.000007	0.0005	0.6179	0.000080
	175	0.1569	0.8701	1.3612	0.0018	0.0706	160	0.0142	0.0009	0.0050	0.0078	0.000010	0.0004	0.9154	0.000081
Concrete/Industrial Saws Total		0.1002	0.4088	0.5572	0.0007	0.0452	58.5	0.0090							
Cranes	50	0.1015	0.2892	0.2394	0.0003	0.0239	23.2	0.0092	0.0020	0.0058	0.0048	0.000006	0.0005	0.4637	0.000183
	120	0.0919	0.3618	0.5508	0.0006	0.0493	50.1	0.0083	0.0008	0.0030	0.0046	0.000005	0.0004	0.4179	0.000069
	175	0.1031	0.4821	0.7769	0.0009	0.0445	80.3	0.0093	0.0006	0.0028	0.0044	0.000005	0.0003	0.4591	0.000053
	250	0.1040	0.2948	0.9948	0.0013	0.0351	112	0.0094	0.0004	0.0012	0.0040	0.000005	0.0001	0.4486	0.000038
	500	0.1551	0.5292	1.4230	0.0018	0.0518	180	0.0140	0.0003	0.0011	0.0028	0.000004	0.0001	0.3602	0.000028
	750	0.2625	0.8887	2.4614	0.0030	0.0885	303	0.0237	0.0003	0.0012	0.0033	0.000004	0.0001	0.4041	0.000032
	9999	0.9491	3.3249	10.3665	0.0098	0.3189	971	0.0856							
Cranes Total		0.1348	0.4737	1.1934	0.0014	0.0508	129	0.0122							

Crawler Tractors	50	0.1176	0.3246	0.2627	0.0003	0.0270	24.9	0.0106	0.0024	0.0065	0.0053	0.000006	0.0005	0.4976	0.000212
	120	0.1293	0.4858	0.7686	0.0008	0.0677	65.8	0.0117	0.0011	0.0040	0.0064	0.000006	0.0006	0.5484	0.000097
	175	0.1674	0.7448	1.2529	0.0014	0.0713	121	0.0151	0.0010	0.0043	0.0072	0.000008	0.0004	0.6925	0.000086
	250	0.1764	0.5000	1.5945	0.0019	0.0613	166	0.0159	0.0007	0.0020	0.0064	0.000007	0.0002	0.6645	0.000064
	500	0.2542	0.9504	2.2389	0.0025	0.0868	259	0.0229	0.0005	0.0019	0.0045	0.000005	0.0002	0.5185	0.000046
	750	0.4574	1.6983	4.1042	0.0047	0.1573	465	0.0413	0.0006	0.0023	0.0055	0.000006	0.0002	0.6196	0.000055
	1000	0.6901	2.6950	7.3731	0.0065	0.2361	658	0.0623	0.0007	0.0027	0.0074	0.000007	0.0002	0.6581	0.000062
Crawler Tractors Total		0.1584	0.5900	1.1593	0.0013	0.0697	114	0.0143							
Crushing/Proc. Equ	50	0.1741	0.5009	0.4359	0.0006	0.0422	44.0	0.0157	0.0035	0.0100	0.0087	0.000011	0.0008	0.8803	0.000314
	120	0.1402	0.5764	0.8552	0.0010	0.0779	83.1	0.0127	0.0012	0.0048	0.0071	0.000008	0.0006	0.6928	0.000105
	175	0.1942	0.9615	1.5237	0.0019	0.0864	167	0.0175	0.0011	0.0055	0.0087	0.000011	0.0005	0.9558	0.000100
	250	0.1848	0.5425	2.0202	0.0028	0.0620	245	0.0167	0.0007	0.0022	0.0081	0.000011	0.0002	0.9781	0.000067
	500	0.2608	0.8480	2.7097	0.0037	0.0884	374	0.0235	0.0005	0.0017	0.0054	0.000007	0.0002	0.7473	0.000047
	750	0.4147	1.3191	4.4498	0.0059	0.1418	589	0.0374	0.0006	0.0018	0.0059	0.000008	0.0002	0.7851	0.000050
	9999	1.1270	3.6752	13.3218	0.0131	0.3880	1,308	0.1017							
Crushing/Proc. Equipment Total		0.1733	0.6773	1.1752	0.0015	0.0748	132	0.0156							
Dumpers/Tenders	25	0.0097	0.0320	0.0601	0.0001	0.0029	7.6	0.0009	0.0004	0.0013	0.0024	0.000004	0.0001	0.3050	0.000035
Dumpers/Tenders Total		0.0097	0.0320	0.0601	0.0001	0.0029	7.6	0.0009							
Excavators	25	0.0198	0.0677	0.1253	0.0002	0.0047	16.4	0.0018	0.0008	0.0027	0.0050	0.000008	0.0002	0.6576	0.000072
	50	0.0816	0.2841	0.2458	0.0003	0.0212	25.0	0.0074	0.0016	0.0057	0.0049	0.000006	0.0004	0.5004	0.000147
	120	0.1086	0.5177	0.6791	0.0009	0.0586	73.6	0.0098	0.0009	0.0043	0.0057	0.000007	0.0005	0.6135	0.000082
	175	0.1208	0.6668	0.8932	0.0013	0.0512	112	0.0109	0.0007	0.0038	0.0051	0.000007	0.0003	0.6413	0.000062
	250	0.1242	0.3541	1.1360	0.0018	0.0372	159	0.0112	0.0005	0.0014	0.0045	0.000007	0.0001	0.6347	0.000045
	500	0.1735	0.5271	1.4763	0.0023	0.0516	234	0.0157	0.0003	0.0011	0.0030	0.000005	0.0001	0.4675	0.000031
	750	0.2895	0.8731	2.5290	0.0039	0.0871	387	0.0261	0.0004	0.0012	0.0034	0.000005	0.0001	0.5166	0.000035
Excavators Total		0.1220	0.5338	0.9071	0.0013	0.0481	120	0.0110							
Forklifts	50	0.0445	0.1623	0.1431	0.0002	0.0121	14.7	0.0040	0.0009	0.0032	0.0029	0.000004	0.0002	0.2934	0.000080
	120	0.0438	0.2176	0.2788	0.0004	0.0241	31.2	0.0040	0.0004	0.0018	0.0023	0.000003	0.0002	0.2602	0.000033
	175	0.0572	0.3307	0.4261	0.0006	0.0246	56.1	0.0052	0.0003	0.0019	0.0024	0.000004	0.0001	0.3203	0.000030
	250	0.0570	0.1614	0.5281	0.0009	0.0168	77.1	0.0051	0.0002	0.0006	0.0021	0.000003	0.0001	0.3085	0.000021
	500	0.0781	0.2208	0.6592	0.0011	0.0228	111	0.0070	0.0002	0.0004	0.0013	0.000002	0.0000	0.2220	0.000014
Forklifts Total		0.0541	0.2235	0.3950	0.0006	0.0204	54.4	0.0049							
Generator Sets	15	0.0149	0.0684	0.1016	0.0002	0.0058	10.2	0.0013	0.0010	0.0046	0.0068	0.000011	0.0004	0.6805	0.000090
	25	0.0266	0.0908	0.1594	0.0002	0.0091	17.6	0.0024	0.0011	0.0036	0.0064	0.000009	0.0004	0.7053	0.000096
	50	0.0872	0.2639	0.2847	0.0004	0.0234	30.6	0.0079	0.0017	0.0053	0.0057	0.000008	0.0005	0.6125	0.000157
	120	0.1106	0.4905	0.7587	0.0009	0.0590	77.9	0.0100	0.0009	0.0041	0.0063	0.000008	0.0005	0.6496	0.000083
	175	0.1347	0.7388	1.2314	0.0016	0.0592	142	0.0122	0.0008	0.0042	0.0070	0.000009	0.0003	0.8113	0.000069
	250	0.1277	0.4365	1.6763	0.0024	0.0464	213	0.0115	0.0005	0.0017	0.0067	0.000010	0.0002	0.8500	0.000046
	500	0.1818	0.7230	2.3955	0.0033	0.0690	337	0.0164	0.0004	0.0014	0.0048	0.000007	0.0001	0.6737	0.000033
	750	0.3035	1.1671	3.9863	0.0055	0.1134	544	0.0274	0.0004	0.0016	0.0053	0.000007	0.0002	0.7251	0.000037
Generator Sets Total		0.0767	0.3045	0.5430	0.0007	0.0324	61.0	0.0069							
Graders	50	0.1080	0.3263	0.2772	0.0004	0.0262	27.5	0.0097	0.0022	0.0065	0.0055	0.000007	0.0005	0.5508	0.000195
	120	0.1254	0.5310	0.7729	0.0009	0.0676	75.0	0.0113	0.0010	0.0044	0.0064	0.000007	0.0006	0.6247	0.000094
	175	0.1467	0.7345	1.1193	0.0014	0.0631	124	0.0132	0.0008	0.0042	0.0064	0.000008	0.0004	0.7081	0.000076
	250	0.1492	0.4331	1.4184	0.0019	0.0494	172	0.0135	0.0006	0.0017	0.0057	0.000008	0.0002	0.6885	0.000054
	500	0.1855	0.6289	1.6842	0.0023	0.0608	229	0.0167	0.0004	0.0013	0.0034	0.000005	0.0001	0.4590	0.000033
	750	0.3952	1.3289	3.6674	0.0049	0.1306	486	0.0357	0.0005	0.0018	0.0049	0.000007	0.0002	0.6477	0.000048
Graders Total		0.1446	0.6053	1.1663	0.0015	0.0593	133	0.0130							



Off-Highway Tractor	120	0.2113	0.7191	1.2368	0.0011	0.1078	93.7	0.0191	0.0018	0.0060	0.0103	0.000009	0.0009	0.7811	0.000159
	175	0.2045	0.8335	1.5337	0.0015	0.0871	130	0.0185	0.0012	0.0048	0.0088	0.000008	0.0005	0.7452	0.000105
	250	0.1641	0.4691	1.4453	0.0015	0.0601	130	0.0148	0.0007	0.0019	0.0058	0.000006	0.0002	0.5217	0.000059
	750	0.6538	2.8815	5.8130	0.0057	0.2353	568	0.0590	0.0009	0.0038	0.0078	0.000008	0.0003	0.7575	0.000079
	1000	0.9818	4.4978	10.0554	0.0082	0.3436	814	0.0886	0.0010	0.0045	0.0101	0.000008	0.0003	0.8143	0.000089
Off-Highway Tractors Total		0.2077	0.7649	1.7062	0.0017	0.0818	151	0.0187							
Off-Highway Trucks	175	0.1441	0.7580	1.0305	0.0014	0.0602	125	0.0130	0.0008	0.0043	0.0059	0.000008	0.0003	0.7148	0.000074
	250	0.1400	0.3837	1.2373	0.0019	0.0412	167	0.0126	0.0006	0.0015	0.0049	0.000007	0.0002	0.6662	0.000051
	500	0.2170	0.6362	1.7865	0.0027	0.0634	272	0.0196	0.0004	0.0013	0.0036	0.000005	0.0001	0.5447	0.000039
	750	0.3542	1.0311	2.9938	0.0044	0.1046	442	0.0320	0.0005	0.0014	0.0040	0.000006	0.0001	0.5890	0.000043
	1000	0.5484	1.6691	5.9808	0.0063	0.1796	625	0.0495	0.0005	0.0017	0.0060	0.000006	0.0002	0.6247	0.000049
Off-Highway Trucks Total		0.2141	0.6361	1.8543	0.0027	0.0644	260	0.0193							
Other Construction	15	0.0118	0.0617	0.0737	0.0002	0.0029	10.1	0.0011	0.0008	0.0041	0.0049	0.000010	0.0002	0.6738	0.000071
	25	0.0160	0.0544	0.1013	0.0002	0.0041	13.2	0.0014	0.0006	0.0022	0.0041	0.000007	0.0002	0.5287	0.000058
	50	0.0753	0.2653	0.2585	0.0004	0.0205	28.0	0.0068	0.0015	0.0053	0.0052	0.000007	0.0004	0.5598	0.000136
	120	0.1006	0.5277	0.7025	0.0009	0.0567	80.9	0.0091	0.0008	0.0044	0.0059	0.000008	0.0005	0.6738	0.000076
	175	0.0935	0.5873	0.8011	0.0012	0.0420	107	0.0084	0.0005	0.0034	0.0046	0.000007	0.0002	0.6087	0.000048
Other Construction Equipment Total	500	0.1452	0.5234	1.5187	0.0025	0.0491	254	0.0131	0.0003	0.0010	0.0030	0.000005	0.0001	0.5085	0.000026
Other General Industrial		0.0872	0.3765	0.7938	0.0013	0.0330	123	0.0079							
Other General Industrial Equipment	15	0.0066	0.0391	0.0466	0.0001	0.0018	6.4	0.0006	0.0004	0.0026	0.0031	0.000007	0.0001	0.4264	0.000040
	25	0.0185	0.0632	0.1170	0.0002	0.0044	15.3	0.0017	0.0007	0.0025	0.0047	0.000008	0.0002	0.6140	0.000067
	50	0.0980	0.2738	0.2243	0.0003	0.0232	21.7	0.0088	0.0020	0.0055	0.0045	0.000006	0.0005	0.4349	0.000177
	120	0.1177	0.4487	0.6789	0.0007	0.0644	62.0	0.0106	0.0010	0.0037	0.0057	0.000006	0.0005	0.5170	0.000089
	175	0.1261	0.5728	0.9333	0.0011	0.0549	95.9	0.0114	0.0007	0.0033	0.0053	0.000006	0.0003	0.5482	0.000065
Other General Industrial Equipment Total	250	0.1174	0.3177	1.2013	0.0015	0.0380	136	0.0106	0.0005	0.0013	0.0048	0.000006	0.0002	0.5423	0.000042
	500	0.2135	0.6384	2.0642	0.0026	0.0693	265	0.0193	0.0004	0.0013	0.0041	0.000005	0.0001	0.5308	0.000039
	750	0.3546	1.0522	3.5146	0.0044	0.1165	437	0.0320	0.0005	0.0014	0.0047	0.000006	0.0002	0.5833	0.000043
	1000	0.5246	1.6793	6.0067	0.0056	0.1805	560	0.0473	0.0005	0.0017	0.0060	0.000006	0.0002	0.5596	0.000047
Other General Industrial Equipment Total		0.1542	0.5159	1.3484	0.0016	0.0580	152	0.0139							
Other Material Handling	50	0.1361	0.3789	0.3119	0.0004	0.0323	30.3	0.0123	0.0027	0.0076	0.0062	0.000008	0.0006	0.6067	0.000246
	120	0.1144	0.4370	0.6628	0.0007	0.0628	60.7	0.0103	0.0010	0.0036	0.0055	0.000006	0.0005	0.5056	0.000086
	175	0.1591	0.7257	1.1860	0.0014	0.0696	122	0.0144	0.0009	0.0041	0.0068	0.000008	0.0004	0.6976	0.000082
	250	0.1241	0.3385	1.2829	0.0016	0.0405	145	0.0112	0.0005	0.0014	0.0051	0.000007	0.0002	0.5801	0.000045
	500	0.1521	0.4596	1.4883	0.0019	0.0498	192	0.0137	0.0003	0.0009	0.0030	0.000004	0.0001	0.3833	0.000027
Other Material Handling Equipment Total		0.1473	0.4951	1.3132	0.0015	0.0562	141	0.0133							
Pavers	25	0.0247	0.0799	0.1500	0.0002	0.0075	18.7	0.0022	0.0010	0.0032	0.0060	0.000009	0.0003	0.7464	0.000089
	50	0.1366	0.3592	0.2948	0.0004	0.0308	28.0	0.0123	0.0027	0.0072	0.0059	0.000007	0.0006	0.5598	0.000246
	120	0.1387	0.5057	0.8357	0.0008	0.0729	69.2	0.0125	0.0012	0.0042	0.0070	0.000007	0.0006	0.5766	0.000104
	175	0.1777	0.7784	1.3769	0.0014	0.0769	128	0.0160	0.0010	0.0044	0.0079	0.000008	0.0004	0.7331	0.000092
	250	0.2072	0.6081	1.9469	0.0022	0.0756	194	0.0187	0.0008	0.0024	0.0078	0.000009	0.0003	0.7775	0.000075
Pavers Total	500	0.2275	0.9254	2.1080	0.0023	0.0818	233	0.0205	0.0005	0.0019	0.0042	0.000005	0.0002	0.4665	0.000041
Pavers Total		0.1511	0.5357	0.8542	0.0009	0.0603	77.9	0.0136							
Paving Equipment	25	0.0153	0.0520	0.0968	0.0002	0.0039	12.6	0.0014	0.0006	0.0021	0.0039	0.000006	0.0002	0.5051	0.000055
	50	0.1166	0.3049	0.2514	0.0003	0.0263	23.9	0.0105	0.0023	0.0061	0.0050	0.000006	0.0005	0.4785	0.000210
	120	0.1087	0.3958	0.6561	0.0006	0.0574	54.5	0.0098	0.0009	0.0033	0.0055	0.000005	0.0005	0.4542	0.000082
	175	0.1387	0.6079	1.0816	0.0011	0.0602	101	0.0125	0.0008	0.0035	0.0062	0.000006	0.0003	0.5773	0.000072
	250	0.1277	0.3763	1.2206	0.0014	0.0467	122	0.0115	0.0005	0.0015	0.0049	0.000006	0.0002	0.4892	0.000046
Paving Equipment Total		0.1142	0.4316	0.7709	0.0008	0.0536	68.9	0.0103							
Plate Compactors	15	0.0050	0.0263	0.0314	0.0001	0.0012	4.3	0.0005	0.0003	0.0018	0.0021	0.000004	0.0001	0.2876	0.000030
Plate Compactors Total		0.0050	0.0263	0.0314	0.0001	0.0012	4.3	0.0005							

Pressure Washers	15	0.0071	0.0328	0.0487	0.0001	0.0028	4.9	0.0006	0.0005	0.0022	0.0032	0.000005	0.0002	0.3260	0.000043
	25	0.0108	0.0368	0.0646	0.0001	0.0037	7.1	0.0010	0.0004	0.0015	0.0026	0.000004	0.0001	0.2859	0.000039
	50	0.0315	0.1037	0.1284	0.0002	0.0094	14.3	0.0028	0.0006	0.0021	0.0026	0.000004	0.0002	0.2859	0.000057
	120	0.0302	0.1443	0.2235	0.0003	0.0157	24.1	0.0027	0.0003	0.0012	0.0019	0.000002	0.0001	0.2006	0.000023
Pressure Washers Total		0.0159	0.0619	0.0878	0.0001	0.0058	9.4	0.0014							
Pumps	15	0.0125	0.0497	0.0752	0.0001	0.0049	7.4	0.0011	0.0008	0.0033	0.0050	0.000008	0.0003	0.4949	0.000075
	25	0.0359	0.1004	0.1761	0.0002	0.0109	19.5	0.0032	0.0014	0.0040	0.0070	0.000010	0.0004	0.7795	0.000129
	50	0.1052	0.3116	0.3228	0.0004	0.0275	34.3	0.0095	0.0021	0.0062	0.0065	0.000009	0.0005	0.6867	0.000190
	120	0.1149	0.4984	0.7706	0.0009	0.0617	77.9	0.0104	0.0010	0.0042	0.0064	0.000008	0.0005	0.6496	0.000086
	175	0.1385	0.7405	1.2344	0.0016	0.0611	140	0.0125	0.0008	0.0042	0.0071	0.000009	0.0003	0.8007	0.000071
	250	0.1266	0.4210	1.6140	0.0023	0.0457	201	0.0114	0.0005	0.0017	0.0065	0.000009	0.0002	0.8055	0.000046
	500	0.1952	0.7595	2.4849	0.0034	0.0734	345	0.0176	0.0004	0.0015	0.0050	0.000007	0.0001	0.6904	0.000035
	750	0.3326	1.2556	4.2353	0.0057	0.1235	571	0.0300	0.0004	0.0017	0.0056	0.000008	0.0002	0.7609	0.000040
Pumps Total		0.0748	0.2926	0.4705	0.0006	0.0323	49.6	0.0067							
Rollers	15	0.0074	0.0386	0.0461	0.0001	0.0018	6.3	0.0007	0.0005	0.0026	0.0031	0.000007	0.0001	0.4213	0.000044
	25	0.0161	0.0549	0.1023	0.0002	0.0041	13.3	0.0015	0.0006	0.0022	0.0041	0.000007	0.0002	0.5337	0.000058
	50	0.1025	0.2911	0.2583	0.0003	0.0245	26.0	0.0092	0.0020	0.0058	0.0052	0.000007	0.0005	0.5197	0.000185
	120	0.0986	0.4063	0.6253	0.0007	0.0534	59.0	0.0089	0.0008	0.0034	0.0052	0.000006	0.0004	0.4916	0.000074
	175	0.1247	0.6199	1.0114	0.0012	0.0550	108	0.0113	0.0007	0.0035	0.0058	0.000007	0.0003	0.6180	0.000064
	250	0.1262	0.3887	1.3124	0.0017	0.0451	153	0.0114	0.0005	0.0016	0.0052	0.000007	0.0002	0.6124	0.000046
	500	0.1654	0.6313	1.6820	0.0022	0.0593	219	0.0149	0.0003	0.0013	0.0034	0.000004	0.0001	0.4382	0.000030
Rollers Total		0.0973	0.4060	0.6546	0.0008	0.0453	67.1	0.0088							
Rough Terrain Fork	50	0.1181	0.3778	0.3316	0.0004	0.0300	33.9	0.0107	0.0024	0.0076	0.0066	0.000009	0.0006	0.6772	0.000213
	120	0.0955	0.4327	0.5995	0.0007	0.0529	62.4	0.0086	0.0008	0.0036	0.0050	0.000006	0.0004	0.5204	0.000072
	175	0.1352	0.7256	1.0448	0.0014	0.0592	125	0.0122	0.0008	0.0041	0.0060	0.000008	0.0003	0.7137	0.000070
	250	0.1294	0.3798	1.2955	0.0019	0.0416	171	0.0117	0.0005	0.0015	0.0052	0.000008	0.0002	0.6832	0.000047
	500	0.1824	0.5717	1.7096	0.0025	0.0584	257	0.0165	0.0004	0.0011	0.0034	0.000005	0.0001	0.5131	0.000033
Rough Terrain Forklifts Total		0.1009	0.4642	0.6526	0.0008	0.0532	70.3	0.0091							
Rubber Tired Doze	175	0.2119	0.8457	1.5561	0.0015	0.0893	129	0.0191	0.0012	0.0048	0.0089	0.000008	0.0005	0.7399	0.000109
	250	0.2435	0.6833	2.0817	0.0021	0.0881	183	0.0220	0.0010	0.0027	0.0083	0.000008	0.0004	0.7339	0.000088
	500	0.3211	1.4228	2.7305	0.0026	0.1133	265	0.0290	0.0006	0.0028	0.0055	0.000005	0.0002	0.5297	0.000058
	750	0.4843	2.1329	4.1797	0.0040	0.1716	399	0.0437	0.0006	0.0028	0.0056	0.000005	0.0002	0.5317	0.000058
	1000	0.7496	3.4322	7.4509	0.0060	0.2591	592	0.0676	0.0007	0.0034	0.0075	0.000006	0.0003	0.5919	0.000068
Rubber Tired Dozers Total		0.2986	1.1749	2.5452	0.0025	0.1064	239	0.0269							
Rubber Tired Load	25	0.0204	0.0697	0.1292	0.0002	0.0050	16.9	0.0018	0.0008	0.0028	0.0052	0.000009	0.0002	0.6772	0.000074
	50	0.1200	0.3641	0.3118	0.0004	0.0292	31.1	0.0108	0.0024	0.0073	0.0062	0.000008	0.0006	0.6230	0.000216
	120	0.0971	0.4152	0.6015	0.0007	0.0525	58.9	0.0088	0.0008	0.0035	0.0050	0.000006	0.0004	0.4909	0.000073
	175	0.1238	0.6274	0.9501	0.0012	0.0535	106	0.0112	0.0007	0.0036	0.0054	0.000007	0.0003	0.6075	0.000064
	250	0.1259	0.3685	1.2125	0.0017	0.0417	149	0.0114	0.0005	0.0015	0.0048	0.000007	0.0002	0.5959	0.000045
	500	0.1867	0.6397	1.7158	0.0023	0.0613	237	0.0168	0.0004	0.0013	0.0034	0.000005	0.0001	0.4740	0.000034
	750	0.3850	1.3084	3.6184	0.0049	0.1276	486	0.0347	0.0005	0.0017	0.0048	0.000007	0.0002	0.6474	0.000046
	1000	0.5190	1.8389	5.9660	0.0060	0.1795	594	0.0468	0.0005	0.0018	0.0060	0.000006	0.0002	0.5939	0.000047
Rubber Tired Loaders Total		0.1195	0.4763	0.9346	0.0012	0.0508	109	0.0108							
Scrapers	120	0.1877	0.6943	1.1141	0.0011	0.0983	93.9	0.0169	0.0016	0.0058	0.0093	0.000009	0.0008	0.7825	0.000141
	175	0.2070	0.9107	1.5564	0.0017	0.0884	148	0.0187	0.0012	0.0052	0.0089	0.000010	0.0005	0.8461	0.000107
	250	0.2252	0.6408	2.0481	0.0024	0.0791	209	0.0203	0.0009	0.0026	0.0082	0.000009	0.0003	0.8379	0.000081
	500	0.3186	1.2113	2.8288	0.0032	0.1099	321	0.0287	0.0006	0.0024	0.0057	0.000006	0.0002	0.6429	0.000057
	750	0.5525	2.0861	4.9949	0.0056	0.1918	555	0.0499	0.0007	0.0028	0.0067	0.000007	0.0003	0.7404	0.000066
Scrapers Total		0.2783	1.0395	2.4118	0.0027	0.1005	262	0.0251							



Signal Boards	15	0.0072	0.0377	0.0450	0.0001	0.0018	6.2	0.0006	0.0005	0.0025	0.0030	0.000006	0.0001	0.4113	0.000043
	50	0.1151	0.3456	0.3415	0.0005	0.0296	36.2	0.0104	0.0023	0.0069	0.0068	0.000009	0.0006	0.7238	0.000208
	120	0.1176	0.5214	0.7807	0.0009	0.0644	80.2	0.0106	0.0010	0.0043	0.0065	0.000008	0.0005	0.6684	0.000088
	175	0.1535	0.8341	1.3333	0.0017	0.0685	155	0.0139	0.0009	0.0048	0.0076	0.000010	0.0004	0.8831	0.000079
	250	0.1632	0.5350	1.9963	0.0029	0.0580	255	0.0147	0.0007	0.0021	0.0080	0.000011	0.0002	1.0212	0.000059
Signal Boards Total		0.0192	0.0934	0.1399	0.0002	0.0077	16.7	0.0017							
Skid Steer Loaders	25	0.0202	0.0620	0.1166	0.0002	0.0063	13.8	0.0018	0.0008	0.0025	0.0047	0.000007	0.0003	0.5518	0.000073
	50	0.0517	0.2263	0.2279	0.0003	0.0157	25.5	0.0047	0.0010	0.0045	0.0046	0.000007	0.0003	0.5104	0.000093
	120	0.0429	0.2748	0.3267	0.0005	0.0245	42.8	0.0039	0.0004	0.0023	0.0027	0.000004	0.0002	0.3563	0.000032
Skid Steer Loaders Total		0.0468	0.2309	0.2522	0.0004	0.0179	30.3	0.0042							
Surfacing Equipment	50	0.0477	0.1403	0.1359	0.0002	0.0119	14.1	0.0043	0.0010	0.0028	0.0027	0.000004	0.0002	0.2822	0.000086
	120	0.0970	0.4215	0.6523	0.0007	0.0517	63.8	0.0088	0.0008	0.0035	0.0054	0.000006	0.0004	0.5314	0.000073
	175	0.0894	0.4730	0.7742	0.0010	0.0392	85.8	0.0081	0.0005	0.0027	0.0044	0.000006	0.0002	0.4901	0.000046
	250	0.1025	0.3374	1.1177	0.0015	0.0376	135	0.0092	0.0004	0.0013	0.0045	0.000006	0.0002	0.5395	0.000037
	500	0.1532	0.6418	1.6597	0.0022	0.0567	221	0.0138	0.0003	0.0013	0.0033	0.000004	0.0001	0.4424	0.000028
	750	0.2443	1.0046	2.6697	0.0035	0.0900	347	0.0220	0.0003	0.0013	0.0036	0.000005	0.0001	0.4627	0.000029
Surfacing Equipment Total		0.1277	0.5182	1.2760	0.0017	0.0468	166	0.0115							
Sweepers/Scrubbers	15	0.0124	0.0729	0.0870	0.0002	0.0034	11.9	0.0011	0.0008	0.0049	0.0058	0.000012	0.0002	0.7959	0.000074
	25	0.0237	0.0808	0.1496	0.0002	0.0058	19.6	0.0021	0.0009	0.0032	0.0060	0.000010	0.0002	0.7845	0.000085
	50	0.1048	0.3425	0.3055	0.0004	0.0271	31.6	0.0095	0.0021	0.0068	0.0061	0.000008	0.0005	0.6310	0.000189
	120	0.1107	0.5147	0.6989	0.0009	0.0622	75.0	0.0100	0.0009	0.0043	0.0058	0.000007	0.0005	0.6253	0.000083
	175	0.1439	0.7997	1.1204	0.0016	0.0637	139	0.0130	0.0008	0.0046	0.0064	0.000009	0.0004	0.7943	0.000074
	250	0.1146	0.3382	1.1784	0.0018	0.0362	162	0.0103	0.0005	0.0014	0.0047	0.000007	0.0001	0.6481	0.000041
Sweepers/Scrubbers Total		0.1148	0.5145	0.6862	0.0009	0.0510	78.5	0.0104							
Tractors/Loaders/B	25	0.0195	0.0657	0.1237	0.0002	0.0056	15.9	0.0018	0.0008	0.0026	0.0049	0.000008	0.0002	0.6345	0.000070
	50	0.0893	0.3199	0.2893	0.0004	0.0238	30.3	0.0081	0.0018	0.0064	0.0058	0.000008	0.0005	0.6069	0.000161
	120	0.0694	0.3529	0.4565	0.0006	0.0383	51.7	0.0063	0.0006	0.0029	0.0038	0.000005	0.0003	0.4311	0.000052
	175	0.0988	0.5861	0.7696	0.0011	0.0428	101	0.0089	0.0006	0.0033	0.0044	0.000007	0.0002	0.5794	0.000051
	250	0.1204	0.3666	1.1658	0.0019	0.0370	172	0.0109	0.0005	0.0015	0.0047	0.000008	0.0001	0.6869	0.000043
	500	0.2290	0.7443	2.0659	0.0039	0.0701	345	0.0207	0.0005	0.0015	0.0041	0.000008	0.0001	0.6897	0.000041
Tractors/Loaders/Backhoes Total		0.0792	0.3782	0.5392	0.0008	0.0387	66.8	0.0071	0.0005	0.0015	0.0043	0.000008	0.0001	0.6897	0.000042
Trenchers	15	0.0099	0.0517	0.0617	0.0001	0.0024	8.5	0.0009	0.0007	0.0034	0.0041	0.000009	0.0002	0.5643	0.000059
	25	0.0397	0.1355	0.2511	0.0004	0.0097	32.9	0.0036	0.0016	0.0054	0.0100	0.000017	0.0004	1.3167	0.000143
	50	0.1566	0.4082	0.3432	0.0004	0.0353	32.9	0.0141	0.0031	0.0082	0.0069	0.000009	0.0007	0.6584	0.000283
	120	0.1281	0.4684	0.7862	0.0008	0.0669	64.9	0.0116	0.0011	0.0039	0.0066	0.000006	0.0006	0.5408	0.000096
	175	0.1955	0.8632	1.5520	0.0016	0.0849	144	0.0176	0.0011	0.0049	0.0089	0.000009	0.0005	0.8223	0.000101
	250	0.2354	0.7089	2.2485	0.0025	0.0880	223	0.0212	0.0009	0.0028	0.0090	0.000010	0.0004	0.8916	0.000085
	500	0.2985	1.3011	2.8470	0.0031	0.1105	311	0.0269	0.0006	0.0026	0.0057	0.000006	0.0002	0.6226	0.000054
	750	0.5663	2.4440	5.4715	0.0059	0.2099	587	0.0511	0.0008	0.0033	0.0073	0.000008	0.0003	0.7825	0.000068
Trenchers Total		0.1427	0.4675	0.6684	0.0007	0.0549	58.7	0.0129							
Welders	15	0.0104	0.0416	0.0629	0.0001	0.0041	6.2	0.0009	0.0007	0.0028	0.0042	0.000006	0.0003	0.4138	0.000063
	25	0.0208	0.0581	0.1020	0.0001	0.0063	11.3	0.0019	0.0008	0.0023	0.0041	0.000006	0.0003	0.4514	0.000075
	50	0.0979	0.2753	0.2535	0.0003	0.0240	26.0	0.0088	0.0020	0.0055	0.0051	0.000007	0.0005	0.5192	0.000177
	120	0.0654	0.2659	0.4099	0.0005	0.0358	39.5	0.0059	0.0005	0.0022	0.0034	0.000004	0.0003	0.3292	0.000049
	175	0.1101	0.5455	0.9083	0.0011	0.0490	98.2	0.0099	0.0006	0.0031	0.0052	0.000006	0.0003	0.5611	0.000057
	250	0.0855	0.2618	1.0026	0.0013	0.0301	119	0.0077	0.0003	0.0010	0.0040	0.000005	0.0001	0.4763	0.000031
Welders Total	500	0.1092	0.3838	1.2526	0.0016	0.0394	168	0.0098	0.0002	0.0008	0.0025	0.000003	0.0001	0.3352	0.000020
		0.0646	0.2096	0.2564	0.0003	0.0225	25.6	0.0058							

All factors already account for load and use rates per SCAQMD.

Average Emissions Factors, lb/hr:  
All Equip, HP Categories

0.1105 (lb/hr)	0.4296 (lb/hr)	0.8339 (lb/hr)	0.0010 (lb/hr)	0.0441 (lb/hr)	94.4934 (lb/hr)	0.0100 (lb/hr)
ROG	CO	NOX	SOX	PM	CO2	CH4

## **APPENDIX E**

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### **Department of Defense Non-Objection Letter**



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OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3000

ACQUISITION,  
TECHNOLOGY  
AND LOGISTICS

17 August 2012

Krista Kisch  
Vice President – Project Development  
Bright Source, Inc.  
1999 Harrison St.  
Suite 2150  
Oakland, CA 94612

Dear Ms. Kisch:

At your request, the DoD Siting Clearinghouse has coordinated an initial review of your proposal for two solar towers at the proposed Palen Towers project in Riverside County, California. While we predict the project will impact the training we conduct in military training routes VR-296, VR-1265, VR-1268, and IR-218, we believe those impacts can be mitigated. Therefore, the Department of Defense will not oppose construction of the project; however, we ask you to continue to coordinate with us as you make micrositing decisions. Your continued cooperation will help us preserve our military's operational, training, and testing capabilities.

Note that this informal review by the DoD does not constitute an action under 49 U.S.C. § 44718 and that neither the DoD nor the Secretary of Transportation are bound by the determination made under the informal review. Please call me at (703) 697-7301 with any questions, and feel free to share this letter with any of your investors or community partners.

Sincerely,

Michael A. Aimone, P.E.  
Executive Director,  
DoD Siting Clearinghouse

## **APPENDIX F**

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### **Draft Fire Safety Plan**

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## **Fire Safety Plan Palen Solar Electric Generating System (PSEGS)**

**\*\*\*DRAFT\*\*\***

### **Fire Prevention – General Requirements**

Palen Solar Holdings, LLC (PSH), along with its contractors and subcontractors, will develop, implement and maintain strict housekeeping practices as an integral part of an overall PSEGS Fire Prevention program. General requirements will include:

- Combustible and flammable waste must not be allowed to accumulate in any work area.
- Scrap and combustible materials must be removed from structures, partly completed buildings and completed buildings as soon as it is generated.
- Flammable and combustible materials must not be stacked or stored against any temporary or permanent building, structure or storage facility.
- Rags, fabric and timber contaminated with any hydrocarbon product must be contained in a closed metal container and removed daily from the workplace to a safe disposal area.
- During periods when the risk of fire is high efforts will be made to limit activities with inherent fire risks including hot work (grinding, cutting, welding), chainsaw/chipping operations, etc.
- Smoking will be strictly prohibited in specific areas including inside all buildings and within 30 feet of any combustible material storage area. These areas will be clearly identified.

### **Material Storage**

Materials will be stored in a manner so as not to obstruct access to fire protection equipment, control valves, fire doors, alarm devices or panels, electrical panels, motor control centers (MCCs) or aisles and hallways that serve as a means of exit. A minimum clearance of 36 inches (91 cm) shall be maintained in all aisle ways leading to an exit. Also, materials will not obstruct sprinkler heads. A minimum clearance of 18 inches (46 cm) will be maintained from sprinkler heads.

Materials in work areas will be limited to actual needs and will be stored in a manner to protect combustible material from ignition sources. Materials will not be stored within 6 feet (1.8 m) of any inside opening or hoist way.

Storage areas will be kept clean, and materials will be neatly stacked or placed. Construction materials shall be stored or placed in an orderly manner. Storage quantities will be minimized. Fire loads imposed by boxed materials (insulation) will be regulated by the Environmental, Safety and Health Department.

## **Flammable and Combustible Liquids**

Flammable liquids (e.g., gasoline, acetone, denatured alcohol) will not be used for cleaning. Flammable/combustible solvents will not be used near ignition sources.

Flammable liquids will be handled and used only in approved, properly labeled safety cans. Only approved containers and portable tanks will be used for the storage and handling of flammable and combustible liquids. Approved metal safety cans will be used for the handling of flammable liquids in quantities greater than 1 US gallon (3.8 L). This rule will not apply to those flammable liquid materials that are highly viscous (extremely hard to pour); such materials may be used and handled in their original shipping containers. For quantities of 1 US gallon (3.8 L) or less, only the original container or approved metal safety cans will be employed for storage, use and handling.

Approved, properly labeled storage cabinets will be supplied for the storage of flammable liquids in quantities exceeding 15 U.S. gallons (12.9 UK gallons).

Flammable and combustible liquids will not be stored in areas used as exits, stairways or passageways, and will not adversely affect a means of egress.

Portable storage tanks will be maintained in a diked area, with provisions made for the handling of spills and groundwater protection. The proximity of tanks to buildings and flammables will comply with local, state and federal regulations.

Smoking will be prohibited where refueling activities are in progress. Clear and legible signs will be posted.

No equipment will be fueled while the engine is running.

Fuel cans shall be placed on the ground for filling to avoid the build-up of a static charge generated by the fuel flowing into the can.

The use of cellular phones or other types of radio-frequency (RF) generating devices (pagers, two-way radios, etc.) shall not be permitted during any fueling operations.

Combustible liquids, including oil or grease, will be stored in containers or storage tanks labeled with contents and tank capacity. Each tank will be:

- Capable of withstanding working pressures and stresses compatible with the type of liquid stored,
- Maintained in a manner that prevents leakage,
- Located in an area free of combustible materials, and
- Vented or otherwise constructed to prevent development of pressures or vacuum as a result of filling, emptying or changes in atmospheric temperature.

Permanent storage areas will be provided for containment or removal of the contents in the event of a tank rupture.

All piping valves and fittings will be capable of withstanding working pressures and stresses compatible with the type of liquid stored and will be maintained in a manner to prevent leaks.

Fuel lines will be equipped with valves capable of stopping the flow of fuel at the source and will be located and maintained to minimize fire hazards. This does not apply to fuel lines on self-propelled equipment.

Particular care will be taken when welding and cutting in locations where combustibles are exposed. When such welding or cutting is done, the surrounding area will be inspected. Combustible material will be removed or protected with fire-resistant blankets or equivalent, and an adequate number of approved fire extinguishers will be immediately available. Flammable liquids will be transferred from one container to another only when containers are electrically interconnected (bonded).

The dispensing units will be protected against collision damage.

## **Compressed Gas Cylinders**

Compressed gas cylinder valves will be closed whenever:

- Work is finished
- The cylinders are empty, or
- The cylinders are moved.

Gauges will be removed and valve protection caps in place before moving cylinders, except when cylinders are secured in a carrier designed for such use.

Compressed gas cylinders will not be hoisted by the valve cap or by means of magnets or slings.

Compressed gas cylinders will be secured in an upright position at all times, except for short periods when being carried or hoisted.

Cylinders will be transported in an upright position and will not be hauled in equipment beds or truck beds on their side. Cylinders lifted from one elevation to another will be lifted only in racks or containers designed for that purpose.

Compressed gas cylinders will be stored/located to avoid exposure to sparks, hot slag or flames. If these cannot be avoided, fire-resistant shields will be provided.

Compressed gas cylinders will not be used as, or placed where they may become part of, an electrical circuit.

Compressed gas cylinders will not be taken into a confined space.

Compressed gas cylinders will not be used as rollers.

Cylinders in storage will be separated (oxygen from fuel gas) by a 5-foot-high (1.5 meters) barrier with a 1-hour fire rating or by a distance of 20 feet (6.1 meters).

Welding gases will be stored in isolated areas and segregated by type of gas.

Cylinders will be stored in well-protected, ventilated, dry locations, at least 20 feet (6.1 meters) from highly combustible materials, and away from egress routes such as stairways and elevators.

Bars will not be used to pry or loosen protective caps. Warm water will be used to loosen caps when frozen.

Damaged or defective cylinders will not be used, but will be tagged and returned to the vendor.

Oxygen cylinders will be kept free of oil and grease.

Compressed gas cylinders will be used and stored in an upright position.

All compressed gas cylinders will be secured in place during use and storage. Securing shall be around the body of the cylinder, midway between top and bottom. Securing around the cylinder neck or by its cap shall be prohibited.

Cylinders will be returned to the main storage area when empty.

If a key wrench is required, it will be in place on the valve of acetylene bottles at all times during use.

The valves of compressed gas cylinders will be completely closed when not in use.

Compressed gas cylinders will not be transported with gauges attached. The gauges will be removed from cylinders and protective caps installed during transportation.

## **Hot Work**

Before Hot Work can be carried out in any construction area, welding fabrication area or shop, the area must be cleared of all combustible and flammable material.

A suitable fire extinguisher must be located within easy reach of operations.

Valves on fuel gas will not be opened more than 1½ turns. If a special key is required for closing the valve, the key will be left in position on the stem at all times or until the task is completed and the caps are replaced.

Fuel gas hose and oxygen hoses will be easily distinguishable and will not be interchangeable. Fuel gas cylinders will not be placed in confined spaces. Fuel gas hoses will be removed from confined spaces when not in use.

When fuel gas rigs are to be used in confined spaces, the atmosphere will be monitored to ensure that a flammable and/or oxygen enriched atmosphere is not created.

Hoses and torches will be inspected before use, and defective hoses will be removed from service.



Boxes used to store fuel gas hoses that have been in use will be ventilated.

Torches will be ignited by friction lighters or other approved devices only.

Cylinders, all hose apparatus, and connectors will be kept free of oil and grease and not handled with oily or greasy hands or gloves.

Oxygen/fuel gas systems will be equipped with approved back-flow valves, flash back arresters and pressure relief devices.

Fuel gas/oxygen equipment will be disconnected from the source when left unattended, such as at lunch or at completion of the task. Torches will not be left inside a confined space unattended.

All employees will use the proper personal protective equipment and clothing when performing or assisting in cutting and welding operations (burning glasses, shields, moleskin suits or flame resistant coveralls and gloves, etc.).

Welding leads and equipment will be properly maintained and inspected before use. Defective equipment will not be used and will be reported to supervision.

Arc welding and cutting operations, including grinding, will be shielded by non-combustible or flameproof screens, shields or other safeguards for the protection of personnel or materials exposed to sparks, slag, falling objects or the ultraviolet (UV)/infrared (IR) radiation of the arc.

Pipelines containing flammable liquids or gases, or electrical cables will not be used as a ground.

The frame of all arc welding or cutting machines will be effectively grounded when the machine's power outlets are being employed as a power source if ground fault interrupter (GFCI) (ELCB) is not being used.

If electrode holders are to be left unattended, the electrodes will be removed and the holder placed where it is protected from unintentional contact.

A fire resistant container will be provided for spent electrode stubs.

Welding machines will be turned off when being moved or when the welder must leave his/her work for any length of time.

No welding or cutting will be done where flammable paints, compounds or dust may create a hazard.

A fire extinguisher with a 30-lb. (13.6 kg) Class A, B, C rating will be at the work location during welding, cutting, soldering, etc.

If normal fire prevention methods are not sufficient to adequately ensure the prevention of fires, additional personnel will be added (fire watch) to guard against potential fires.

Fire Watches will be trained and will remain at the location a sufficient amount of time, as required by the governing standards (e.g., HSE requires minimum 60 minutes; OSHA requires minimum 30 minutes, etc.) after work is stopped to ensure that no possibility of fire exists. In the absence of an existing standard, it shall be as defined in the project's ES&H Execution Plan.

Tanks, vessels, drums, etc., which have contained flammable or toxic liquids will be filled with water or thoroughly cleaned before welding, cutting or heating is undertaken on them. If a toxic material is involved, the ES&H Department will evaluate the operation.

Sufficient ventilation will be provided as needed to maintain welding fumes and smoke below permissible exposure limits. Where sufficient ventilation cannot be achieved, alternative methods will be developed.

Where a preservative coating is present, the coating will be removed or alternative methods used for a sufficient distance in each direction to prevent appreciable heating of the coating.

All cutting, welding or burning operations to be done within confined spaces require a Hot Work Permit, a Confined Space Entry Permit and authorization from the general contractor.

Hot Work at height and from scaffolding presents special hazards. The controls are as follows:

- All work must be coordinated with other Subcontractors working in the area.
- Areas beneath Hot Work must be cleared of all combustible and flammable materials.
- Fire retardant material must be used to cover scaffold boards and to enclose operations.
- Fire retardant material must be removed at the end of every shift to expose scaffold boards or combustible materials.

Hot Work within completed and substantially completed buildings, structures adjacent to fuel and gas lines, control facilities, electricity substations, electrical equipment and distribution lines will be subject to the strict application and conditions of a Hot Work Permit.

- A Fire Watch will remain on-guard at the site of Hot Work activity a sufficient amount of time, as required by the governing standards (e.g., HSE requires minimum 60 minutes; OSHA requires minimum 30 minutes, etc.) after work is finished at the end of the shift or as per Permit requirements. In the absence of an existing standard, it shall be as defined in the project's ES&H Execution Plan.

## **Temporary Buildings**

No temporary building will be erected where it will adversely affect any means of exit. Clearance will be maintained around lights and heating units to prevent ignition of combustible materials.

Temporary buildings, when located within another building or structure, will be of either non-combustible construction or of combustible construction having a fire resistance of not less than one hour.

If a temporary building is not located inside another structure and is not employed for the

storage, handling or use of flammable or combustible liquids, flammable gases, explosives or blasting agents, or similar hazardous occupancies, then said building will be placed at a distance of not less than 10 feet (3 meters) from another building or structure. Groups of temporary buildings not exceeding 2,000 square feet (185.8 square meters) in aggregate will, for the purpose of this section, be considered a single temporary building.

## **Inspection & Testing**

General and specific inspection schedules will be developed and implemented.

General inspections will be conducted weekly covering all construction areas, storage and lay down areas, fabrication and painting areas.

All inspections will be conducted to an agreed standard and recorded using an Inspection Checklist Record.

High activity and high-risk areas, such as substantially completed and completed buildings, fuel oil and gas feed stock and storage facilities and power distribution areas, will be inspected daily or more frequently, dependent on activity and risk.

Inspections required by Hot Work Permit will be carried out as per Permit requirements. The Project ES&H Execution Plan shall specify the format for its Hot Work Permit.

## **Training**

Fire prevention and fire precautions training will be given to all Supervisors, Foremen, Fire Watches, Authorized Hot Work Permit Applicants, Security personnel, Stores personnel, and selected employees at the HHSEGS Project Site. The training program will include:

- Checking portable fire extinguishers
- Hazard recognition and risk potential
- Inspection methods
- Hot Work Permit requirements
- Emergency fire procedures
- Selection and use of portable fire extinguishers
- Equipment refueling procedures, and
- Storage and handling of flammable and combustible liquids.

*Note: All training and retraining will be recorded.*

## **Electrical Equipment**

Electrical installation will be performed by a competent electrician and will conform to electrical codes.

Flexible cables, tools and equipment including welding equipment must be inspected regularly for damage.

Only approved connectors may be used on electric arc welding leads.

All electrical equipment must be isolated after working hours or when not in use.

Task lighting, particularly halogen lamps, must be clear of combustible materials when in use.

## **Mobile Plant and Portable Equipment**

Mobile plant must not be refuelled while the engine is running. Approved type of filling and fuel dispensing equipment must be used.

A suitable portable fire extinguisher should be placed adjacent to electric arc welding sets, electricity generating sets, air compressors and gas burning equipment.

All mobile plant and fuel trucks should carry or have a suitable portable fire extinguisher attached.

Unless fit for purpose, internal combustion engines on mobile plant such as excavators, tractors, trucks and cranes, must be switched off when not in use.

All internal combustion, stationary or mobile, shall be equipped with spark arrestors.

Light trucks and cars shall be used only on designated roadways that have been cleared of vegetation.

## **Fire Protection Equipment**

Firefighting equipment (hose, nozzles, fire buckets, fire extinguishers) will be available when the project begins.

Fire extinguishers will be conspicuously marked, and clear access to each will be maintained. Employees will be trained in the use of fire extinguishers.

Fire extinguishers will be inspected, tested and maintained in accordance with applicable codes/standards, such as National Fire Protection Association (NFPA) standards or international equivalent.

Each fire extinguisher will be replaced immediately after discharge with another fire extinguisher that is fully charged and of the proper size and type.

A temporary or permanent water supply of sufficient volume, pressure and duration will be made available.

If sprinkler systems are being installed, their installation will closely follow construction and they will be placed in service as soon as practical or as local/state building codes require.

Charged fire hoses will be made available during demolition operations involving combustible materials.

Smoking will be permitted only in designated areas. Smoking will be prohibited at or in the vicinity of operations that constitute a fire hazard. A sign reading "No Smoking or Open Flame" will be conspicuously posted.

Electrical wiring and equipment for light, heat or power purposes will be installed in compliance with government requirements.

During construction, all contractor facilities will be kept free from accumulation of unnecessary combustible materials. Weeds and grass will be kept down, and a regular procedure will be established for the periodic cleanup of the entire area.

Portable heaters, regardless of fuel source, will be equipped with an approved automatic device to shut off the flow of gas to the main burner and pilot, if used, in the event of flame failure. Heaters having inputs above 50,000 Btu per hour will be equipped with either a pilot, which must be lighted and proved before the main burner can be turned on, or an electrical ignition system.

Portable electric heaters will be equipped with a tip alarm and an automatic shut-off that will turn the heater off when tipped.

## **Fire Emergencies**

All fires and other emergencies, regardless of the size and/or circumstance(s), shall be immediately reported utilizing the 911 system.

Employees shall be trained in proper reporting procedures such as the nature of the emergency, the exact location, a contact person/callback number and any other important information.

## **APPENDIX G**

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### Visual Contrast Rating Worksheets

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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET


Date 4/21/2013

District Palm Springs - South Coast

Resource Area Chuckwalla - Palen

Activity (program) Solar Energy

SECTION A. PROJECT INFORMATION

1. Project Name Palen Solar Electric Generating System (PSEGS)	4. Location Township <u>5 South</u> Range <u>17 E</u> Section <u>Multiple Sections</u>	5. Location Sketch 
2. Key Observation Point KOP 3 Coxcomb WA (JTNP)		
3. VRM Class VRI Class III VRM Class (Not disclosed by BLM)		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	Planar, gently sloping ground plane, flat dry lakebed, faintly pyramidal mountains in the background.	Rounded irregular scrub and small trees	Trapezoidal roadbed and cylindrical power line wood poles cross the view in the foreground.
LINE	Horizontal lines of vehicle tracks in foreground. Sinuous line of small wash in foreground. Jagged line of mountains in background.	Irregular but distinct horizontal line where scrub gives way to dry lakebed. Dark diagonal line of agriculture in background.	Faint horizontal and vertical lines of road and electrical poles. Intermittently visible horizontal lines of conductors.
COLOR	Beige, light brown mottled ground plane. Distinct change sand color in middleground.	Relatively green to grey-green creosote scrub. More verdant green approaching dry lakebed.	Grey asphalt roadbed. Dark brown utility poles. Faint silver grey conductors.
TEXTURE	Slightly coarse foreground, smooth flat middleground. Very smooth dry lakebed	Medium coarse random foreground. Gradation to more ordered continuous middleground. Smooth texture in dry lakebed.	Smooth textured road and wood poles.

SECTION C. PROPOSED ACTIVITY DESCRIPTION

It is approximately 10.0 miles from KOP-3 to the center of the proposed project (Background distance zone)

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	No change.	No change.	Two power towers create new vertical cylindrical forms and two elevated air cooled condensers create rectangular forms approximately 10.0 miles away in the background distance zone.
LINE	No change.	No change.	Two power towers create new vertical lines that barely intersect the horizon of the background mountains. Two elevated air cooled condensers create horizontal lines at the base of the towers.
COLOR	No change.	No change.	Two power towers and two elevated air cooled condensers are medium grey at this distance.
TEXTURE	No change.	No change.	Two power towers and two elevated air cooled condensers are smooth textured.



**SECTION D. CONTRAST RATING   ☐ SHORT TERM   ☒ LONG TERM**

1.  <b>DEGREE OF CONTRAST</b>		<b>FEATURES</b>												2. Does project design meet visual resource management objectives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)	
		<b>LANDWATER BODY (1)</b>				<b>VEGETATION (2)</b>				<b>STRUCTURES (3)</b>					
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	3. Additional mitigating measures recommended? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Explain on reverse side)	
<div> <div> <b>EVALUATOR'S NAMES</b>  Lee Roger Anderson, CA LLA#1586  Peter Langenfeld  Timothy R Zack  Thomas Cherry, PLA, ASLA </div> <div> <b>DATE</b>  5/23/2013 </div> </div>															
<b>ELEMENTS</b>	Form				X				X		X				
	Line				X				X		X				
	Color				X				X			X			
	Texture				X				X			X			

**SECTION D. (Continued)**

Comments from item 2.

The BLM did not respond in a timely manner to a request for a management decision on the final adopted Visual Resource Management Class (VRM Class) or the Interim Visual Resource Management Class (IVRM) designations for the project area. For this analysis, we had to move forward using the presumption that the Visual Resource Inventory Class (VRI Class) has been adopted as the VRM Class. The VRI Class for this area is III.

In determining whether the proposed action would conform to the assigned VRM class, the four levels of contrast roughly correspond with the four VRM classes. This means that a “strong” contrast rating may be acceptable in an area with VRM Class IV, but probably would not meet the objectives of a VRM Class I, II, or III area. Similarly, a “weak” contrast rating may be acceptable in an area with VRM Class II, but probably would not meet the objectives of a VRM Class I area. The table below shows the correlation between contrast rating and determining whether VRM objectives are met.

Degree of Contrast	VRM Class	Definition
None	Class I Preserve	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention. (This classification is usually applied to wilderness areas, wild and scenic rivers, and other similar situations.)
Weak	Class II Retain	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
Moderate	Class III Partially Retain	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
Strong	Class IV Major Modification	The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

The proposed project as seen from KOP-3 will create moderate visual contrasts of form and line, and weak visual contrasts of color and texture. This equates to a rating somewhere between Class II (retention of landscape character) and Class III (partial retention of landscape character).

Therefore, the proposed project will comply with the definition of Class III, above, as seen from KOP-3 at Coxcomb Mtn. WA in the Joshua Tree National Park.

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Additional Mitigating Measures (See item 3)

The PSPP EIS identified these Mitigation Measures to aid in reducing visual impact by reducing contrast.

*The implementation of mitigation measures imposed by the Energy Commission as Conditions of Certification for the project also would avoid or reduce impacts on the quality of the human environment. These mitigation measures are summarized here in connection with the impacts they would address, and are set forth in full in Appendix B – APPLICANT PROPOSED MEASURES.*

*VIS-1, Surface Treatment of Project Structures and Buildings*

*VIS-2, Re-vegetation of Disturbed Soil Areas*

*VIS-3, Temporary and Permanent Exterior Lighting*

*VIS-4, Project Design*

*TRANS-6, Heliostat Positioning Plan*

*AQ-SC3, Construction Fugitive Dust Control*

*AQ-SC4, Dust Plume Response Requirement*

*BIO-8, Impact Avoidance and Minimization Measures*

*BIO-22, Decommissioning and Reclamation Plan*

*BLM-VIS-1, Component Color Treatments*

*BLM-VIS-2, Consultation with the NPS Night Sky Program Manager*

No additional mitigation measures beyond these are required because of the view from KOP-3 Coxcomb WA (JTNP).



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET


Date 4/23/2013

District Palm Springs - South Coast

Resource Area Chuckwalla - Palen

Activity (program) Solar Energy

SECTION A. PROJECT INFORMATION

1. Project Name Palen Solar Electric Generating System (PSEGS)	4. Location Township 5 South Range 17 E Section Multiple Sections	5. Location Sketch 
2. Key Observation Point KOP 7 Big Wash (JTNP)		
3. VRM Class VRI Class III VRM Class (Not disclosed by BLM)		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

1. LANDWATER		2. VEGETATION	3. STRUCTURES
FORM	Incised drainage rills of Big Wash in the foreground. Planar, gently sloping ground plane in the middleground, with jagged triangular forms of pyramidal mountains in the background.	Rounded irregular creosote scrub and more vertical small trees in foreground. Gradating to indistinguishable forms with a rectangular area of residential vegetation in the distance.	Rectangular form of Lake Tamarisk.
LINE	Random drainage lines. Strong horizontal line at elevation change. Complex broken lines in foreground.	Distinct horizontal line of ornamental vegetation at Lake Tamarisk.	No apparent structure. Buildings at Lake Tamarisk are indistinguishable.
COLOR	Beige, light brown mottled ground plane. Becoming more consistent medium brown in the distance.	Relatively green to grey-green creosote scrub. Distinct dark green band of evergreen trees at Lake Tamarisk.	No apparent structure. Buildings at Lake Tamarisk are indistinguishable because of evergreen tree screening.
TEXTURE	Coarse jumbled random rocks and boulders in the foreground, smooth flat middleground. Stippled in the background.	Medium coarse random foreground. Gradation to more ordered continuous middleground and background.	No apparent structure. Buildings at Lake Tamarisk are indistinguishable.

SECTION C. PROPOSED ACTIVITY DESCRIPTION

It is approximately 15.5 miles from KOP-7 to the center of the proposed project (Seldom Seen distance zone)

1. LANDWATER		2. VEGETATION	3. STRUCTURES
FORM	No change.	No change.	Two power towers create new vertical cylindrical forms and two elevated air cooled condensers create rectangular forms approximately 15.5 miles away (in the seldom seen area, beyond the background distance zone, as defined by the BLM).
LINE	No change.	No change.	Two power towers create new vertical lines. Two elevated air cooled condensers create horizontal lines at the base of the towers.
COLOR	No change.	No change.	Two power towers and two elevated air cooled condensers are medium grey at this distance.
TEXTURE	No change.	No change.	Two power towers and two elevated air cooled condensers are smooth textured.

**SECTION D. CONTRAST RATING   ☐ SHORT TERM   ☒ LONG TERM**

1.  DEGREE  OF  CONTRAST		FEATURES												2. Does project design meet visual resource management objectives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)
		LANDWATER BODY (1)				VEGETATION (2)				STRUCTURES (3)				
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	
ELEMENTS	Form				X				X		X			3. Additional mitigating measures recommended? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Explain on reverse side)
	Line				X				X		X			
	Color				X				X			X		
	Texture				X				X			X		
Evaluator's Names: Lee Roger Anderson, CA LLA#1586   Date: 5/23/2013 Peter Langenfeld Timothy R Zack Thomas Cherry, PLA, ASIA														

**SECTION D. (Continued)**

Comments from item 2.

The BLM did not respond in a timely manner to a request for a management decision on the final adopted Visual Resource Management Class (VRM Class) or the Interim Visual Resource Management Class (IVRM) designations for the project area. For this analysis, we had to move forward using the presumption that the Visual Resource Inventory Class (VRI Class) has been adopted as the VRM Class. The VRI Class for this area is III.

In determining whether the proposed action would conform to the assigned VRM class, the four levels of contrast roughly correspond with the four VRM classes. This means that a "strong" contrast rating may be acceptable in an area with VRM Class IV, but probably would not meet the objectives of a VRM Class I, II, or III area. Similarly, a "weak" contrast rating may be acceptable in an area with VRM Class II, but probably would not meet the objectives of a VRM Class I area. The table below shows the correlation between contrast rating and determining whether VRM objectives are met.

Degree of Contrast	VRM Class	Definition
None	Class I Preserve	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention. (This classification is usually applied to wilderness areas, wild and scenic rivers, and other similar situations.)
Weak	Class II Retain	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
Moderate	Class III Partially Retain	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
Strong	Class IV Major Modification	The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

The proposed project as seen from KOP-7 will create moderate visual contrasts of form and line, and weak visual contrasts of color and texture. This equates to a rating somewhere between Class II (retention of landscape character) and Class III (partial retention of landscape character).

Therefore, the proposed project will comply with the definition of Class III, above, as seen from KOP-7 at Big Wash in Joshua Tree National Park.



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Additional Mitigating Measures (See item 3)

The PSPP EIS identified these Mitigation Measures to aid in reducing visual impact by reducing contrast.

*The implementation of mitigation measures imposed by the Energy Commission as Conditions of Certification for the project also would avoid or reduce impacts on the quality of the human environment. These mitigation measures are summarized here in connection with the impacts they would address, and are set forth in full in Appendix B – APPLICANT PROPOSED MEASURES.*

*VIS-1, Surface Treatment of Project Structures and Buildings*

*VIS-2, Re-vegetation of Disturbed Soil Areas*

*VIS-3, Temporary and Permanent Exterior Lighting*

*VIS-4, Project Design*

*TRANS-6, Heliostat Positioning Plan*

*AQ-SC3, Construction Fugitive Dust Control*

*AQ-SC4, Dust Plume Response Requirement*

*BIO-8, Impact Avoidance and Minimization Measures*

*BIO-22, Decommissioning and Reclamation Plan*

*BLM-VIS-1, Component Color Treatments*

*BLM-VIS-2, Consultation with the NPS Night Sky Program Manager*

No additional mitigation measures beyond these are required because of the view from KOP-7 at Big Wash (JTNP).

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

Date 4/24/2013

District Palm Springs - South Coast

Resource Area Chuckwalla - Palen

Activity (program) Solar Energy

SECTION A. PROJECT INFORMATION

1. Project Name  
Palen Solar Electric Generating System (PSEGS)

4. Location  
Township 5 South

Range 17 E

Section Multiple Sections

2. Key Observation Point  
KOP 8 Dragon Wash (JTNP)

3. VRM Class  
VRI Class III  
VRM Class (Not disclosed by BLM)

5. Location Sketch



SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Jumbled rugged complex rock shoulder transitioning to flat, gently sloping ground plane. Jagged triangular forms of pyramidal mountains in the background	Rounded irregular creosote scrub and irregular small trees in foreground. Gradating to a closed carpet of creosote scrub on the middleground and background plane.	Three sagging transmission line conductors cross the sky and desert plane in the foreground/middleground
LINE	Complex random line of boulder in foreground. Strong horizontal line of desert plane in foreground/middleground, extending to background.	Weak horizontal banding of vegetation in middleground.	Horizontal line of transmission line conductors
COLOR	Brown rocks and tan colored sand in foreground and blue grey mountains in the background.	Green to grey-green creosote scrub. Distinct dark green band of color in middleground becoming indistinct farther away	Black to dark grey transmission line conductors.
TEXTURE	Coarse textured rockforms in the foreground, mottled texture flat middleground, stippled on the background plane. Smooth textured mountains at horizon.	Medium coarse random foreground. Gradation to more ordered continuous and medium texture in middleground and background.	Smooth textured transmission line conductors

SECTION C. PROPOSED ACTIVITY DESCRIPTION

It is approximately 16.0 miles from KOP-8 to the center of the proposed project (Seldom Seen distance zone).

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	No change.	No change.	Two power towers create new vertical cylindrical forms and two elevated air cooled condensers create rectangular forms approximately 16.0 miles away (in the seldom seen area, beyond the background distance zone, as defined by the BLM)
LINE	No change.	No change.	Two power towers create new vertical lines and two elevated air cooled condensers create horizontal lines at the base of the towers.
COLOR	No change.	No change.	Two power towers and two elevated air cooled condensers are medium grey at this distance.
TEXTURE	No change.	No change.	Two power towers and two elevated air cooled condensers are smooth textured.



**SECTION D. CONTRAST RATING   ☐ SHORT TERM   ☒ LONG TERM**

1.  DEGREE  OF  CONSTRAST		FEATURES												2. Does project design meet visual resource management objectives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)
		LANDWATER BODY (1)				VEGETATION (2)				STRUCTURES (3)				
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	
<b>ELEMENTS</b>	Form				X				X		X			3. Additional mitigating measures recommended? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Explain on reverse side)  Evaluator's Names Lee Roger Anderson, CA LLA#1586 Peter Langenfeld Timothy R Zack Thomas Cherry, PLA, ASLA  Date 5/23/2013
	Line				X				X		X			
	Color				X				X			X		
	Texture				X				X			X		

**SECTION D. (Continued)**

Comments from item 2.

The BLM did not respond in a timely manner to a request for a management decision on the final adopted Visual Resource Management Class (VRM Class) or the Interim Visual Resource Management Class (IVRM) designations for the project area. For this analysis, we had to move forward using the presumption that the Visual Resource Inventory Class (VRI Class) has been adopted as the VRM Class. The VRI Class for this area is III.

In determining whether the proposed action would conform to the assigned VRM class, the four levels of contrast roughly correspond with the four VRM classes. This means that a “strong” contrast rating may be acceptable in an area with VRM Class IV, but probably would not meet the objectives of a VRM Class I, II, or III area. Similarly, a “weak” contrast rating may be acceptable in an area with VRM Class II, but probably would not meet the objectives of a VRM Class I area. The table below shows the correlation between contrast rating and determining whether VRM objectives are met.

Degree of Contrast	VRM Class	Definition
None	Class I Preserve	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention. (This classification is usually applied to wilderness areas, wild and scenic rivers, and other similar situations.)
Weak	Class II Retain	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
Moderate	Class III Partially Retain	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
Strong	Class IV Major Modification	The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

The proposed project as seen from KOP-8 will create moderate visual contrasts of form and line, and weak visual contrasts of color and texture. This equates to a rating somewhere between Class II (retention of landscape character) and Class III (partial retention of landscape character).

Therefore, the proposed project will comply with the definition of Class III, above, as seen from KOP-8 at Dragon Wash in Joshua Tree National Park.

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Additional Mitigating Measures (See item 3)

The PSPP EIS identified these Mitigation Measures to aid in reducing visual impact by reducing contrast.

*The implementation of mitigation measures imposed by the Energy Commission as Conditions of Certification for the project also would avoid or reduce impacts on the quality of the human environment. These mitigation measures are summarized here in connection with the impacts they would address, and are set forth in full in Appendix B – APPLICANT PROPOSED MEASURES.*

*VIS-1, Surface Treatment of Project Structures and Buildings*

*VIS-2, Re-vegetation of Disturbed Soil Areas*

*VIS-3, Temporary and Permanent Exterior Lighting*

*VIS-4, Project Design*

*TRANS-6, Heliostat Positioning Plan*

*AQ-SC3, Construction Fugitive Dust Control*

*AQ-SC4, Dust Plume Response Requirement*

*BIO-8, Impact Avoidance and Minimization Measures*

*BIO-22, Decommissioning and Reclamation Plan*

*BLM-VIS-1, Component Color Treatments*

*BLM-VIS-2, Consultation with the NPS Night Sky Program Manager*

No additional mitigation measures beyond these are required because of the view from KOP-8 at Dragon Wash (JTNP).



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET


Date 4/25/2013

District Palm Springs - South Coast

Resource Area Chuckwalla - Palen

Activity (program) Solar Energy

SECTION A. PROJECT INFORMATION

1. Project Name Palen Solar Electric Generating System (PSEGS)	4. Location Township 5 South Range 17 E Section Multiple Sections	5. Location Sketch 
2. Key Observation Point KOP 9 Alligator Rock ACEC (BLM)		
3. VRM Class VRI Class III VRM Class (Not disclosed by BLM)		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	Gently sloping ground plane, pyramidal mountains in the background.	Rounded irregular creosote scrub and more vertical small trees in foreground. Middleground beyond is obscured. Background vegetation is not evident.	Cylindrical forms of transmission line tubular steel poles.
LINE	Linear, sloping drainage rills in foreground. Jagged silhouettes of mountains in background.	Converging line by banded vegetation patterns/	Horizontal transmission line conductors with strong vertical line of tubular steel poles with less dominant horizontal cross-arms and 6 weak horizontal lines of transmission line conductors.
COLOR	Tan colored sand in foreground. Becoming grey green with creosote scrub in the middleground. Background colors muted blue greys.	Relatively green to grey-green creosote scrub becoming obscured and indistinct farther away with distinct line of unvegetated dry lakebed.	Black to dark grey transmission line conductors. Dark browns of the vertical transmission line tubular steel poles.
TEXTURE	Smooth sloping foreground, middleground obscured. Smooth textured dry lakebed at the base of the rugged textured mountains in the background.	Medium coarse random texture in foreground. Gradation to more continuous medium middleground texture, with background vegetation indistinguishable.	Smooth textured transmission line conductors and tubular steel poles.

SECTION C. PROPOSED ACTIVITY DESCRIPTION

It is approximately 11.1 miles from KOP-9 to the center of the proposed project (Background distance zone)

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	No change.	No change.	Two power towers create new vertical cylindrical forms approximately 11.1 miles away in the background distance zone.
LINE	No change.	No change.	Two power towers create weak new vertical lines in the landscape. These new lines do not protrude above the horizon in this sloping and relatively horizontal landscape.
COLOR	No change.	No change.	Two power towers are medium grey at this distance.
TEXTURE	No change.	No change.	Two power towers are smooth textured.

**SECTION D. CONTRAST RATING   ☐ SHORT TERM   ☒ LONG TERM**

1.  <b>DEGREE OF CONTRAST</b>		<b>FEATURES</b>												2. Does project design meet visual resource management objectives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)	
		<b>LANDWATER BODY (1)</b>				<b>VEGETATION (2)</b>				<b>STRUCTURES (3)</b>					
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	3. Additional mitigating measures recommended? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Explain on reverse side)	
<div style="display: flex; justify-content: space-between;"> <div> <b>EVALUATOR'S NAMES</b>  Lee Roger Anderson, CA LLA#1586  Peter Langenfeld  Timothy R Zack  Thomas Cherry, PLA, ASLA </div> <div> <b>DATE</b>  5/23/2013 </div> </div>															
Form			X				X			X					
Line			X				X			X					
Color			X				X			X					
Texture			X				X			X					

**SECTION D. (Continued)**

Comments from item 2.

The BLM did not respond in a timely manner to a request for a management decision on the final adopted Visual Resource Management Class (VRM Class) or the Interim Visual Resource Management Class (IVRM) designations for the project area. For this analysis, we had to move forward using the presumption that the Visual Resource Inventory Class (VRI Class) has been adopted as the VRM Class. The VRI Class for this area is III.

In determining whether the proposed action would conform to the assigned VRM class, the four levels of contrast roughly correspond with the four VRM classes. This means that a “strong” contrast rating may be acceptable in an area with VRM Class IV, but probably would not meet the objectives of a VRM Class I, II, or III area. Similarly, a “weak” contrast rating may be acceptable in an area with VRM Class II, but probably would not meet the objectives of a VRM Class I area. The table below shows the correlation between contrast rating and determining whether VRM objectives are met.

Degree of Contrast	VRM Class	Definition
None	Class I Preserve	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention. (This classification is usually applied to wilderness areas, wild and scenic rivers, and other similar situations.)
Weak	Class II Retain	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
Moderate	Class III Partially Retain	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
Strong	Class IV Major Modification	The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

The proposed project as seen from KOP-9 will create weak visual contrasts of form, line, color, and texture. This equates to a rating of VRM Class II (retention of landscape character).

Therefore, the proposed project will comply with the definition of Class III, above, as seen from KOP-9 at Alligator Rock ACEC (BLM).



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Additional Mitigating Measures (See item 3)

The PSPP EIS identified these Mitigation Measures to aid in reducing visual impact by reducing contrast.

*The implementation of mitigation measures imposed by the Energy Commission as Conditions of Certification for the project also would avoid or reduce impacts on the quality of the human environment. These mitigation measures are summarized here in connection with the impacts they would address, and are set forth in full in Appendix B – APPLICANT PROPOSED MEASURES.*

*VIS-1, Surface Treatment of Project Structures and Buildings*

*VIS-2, Re-vegetation of Disturbed Soil Areas*

*VIS-3, Temporary and Permanent Exterior Lighting*

*VIS-4, Project Design*

*TRANS-6, Heliostat Positioning Plan*

*AQ-SC3, Construction Fugitive Dust Control*

*AQ-SC4, Dust Plume Response Requirement*

*BIO-8, Impact Avoidance and Minimization Measures*

*BIO-22, Decommissioning and Reclamation Plan*

*BLM-VIS-1, Component Color Treatments*

*BLM-VIS-2, Consultation with the NPS Night Sky Program Manager*

No additional mitigation measures beyond these are required because of the view from KOP-9 at Alligator Rock ACEC (BLM).

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET


Date 4/26/2013

District Palm Springs - South Coast

Resource Area Chuckwalla - Palen

Activity (program) Solar Energy

SECTION A. PROJECT INFORMATION

1. Project Name Palen Solar Electric Generating System (PSEGS)	4. Location Township 5 South Range 17 E Section Multiple Sections	5. Location Sketch 
2. Key Observation Point KOP 10 I-10 Freeway Eastbound		
3. VRM Class VRI Class III VRM Class (Not disclosed by BLM)		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	Trapezoidal roadbed, sloping planer middleground, pyramidal mountains in the background. There is no water visible in this landscape.	Rounded irregular creosote scrub and small trees in foreground. Beyond is gradating into mottled middleground and background.	Linear road. Jumbled vertical mass of geometric lattice towers at the electrical substation and seen against the horizon elsewhere. Vehicle motion on roadway attracts attention.
LINE	Jagged silhouettes of mountains. Strong middleground horizon line.	Indistinct vegetation lines	Strong vertical line of lattice towers and tubular steel poles, and converging lines of Interstate 10 roadway. Moderately strong horizontal line of the perimeter wall of the electrical substation.
COLOR	Heavy grey green creosote scrub vegetation obscures tan colored sand ground plane.	Mottled tans in foreground to grey greens in the middleground to blue green of the background.	Dark grey roadway surface. Glaring white to grey of the electrical substation transmission towers. Dark browns of the vertical tubular steel poles on both sides of the highway.
TEXTURE	Smooth sloping foreground and middleground obscured by coarse textured creosote scrub. Texture of distant mountains is indistinguishable.	Medium coarse random foreground. Gradation to more continuous middleground and background vegetation indistinguishable.	Smooth roadbed of Interstate 10. Lattice texture of the transmission towers within the electrical substation.

SECTION C. PROPOSED ACTIVITY DESCRIPTION

It is approximately 6.9 miles from KOP-10 to the center of the proposed project (Background distance zone).

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	No change.	No change.	Two power towers create new vertical cylindrical forms and one of the elevated air cooled condensers creates a rectangular form approximately 6.9 miles away in the background distance zone.
LINE	No change.	No change.	Two power towers create strong new vertical lines in the landscape that protrude above the horizon in this sloping and relatively horizontal landscape. An elevated air cooled condenser creates a horizontal line at the base of one of the towers.
COLOR	No change.	No change.	Two power towers and the elevated air cooled condenser are medium grey at this distance.
TEXTURE	No change.	No change.	Two power towers and the elevated air cooled condenser are smooth textured.



**SECTION D. CONTRAST RATING   ☐ SHORT TERM   ☒ LONG TERM**

1.		FEATURES												2. Does project design meet visual resource management objectives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Explain on reverse side)	
		LANDWATER BODY (1)				VEGETATION (2)				STRUCTURES (3)					
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None		
DEGREE OF CONTRAST														3. Additional mitigating measures recommended? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)	
ELEMENTS	Form				X			X			X			Evaluator's Names <b>Lee Roger Anderson, CA LLA#1586</b> <b>Peter Langenfeld</b> <b>Timothy R Zack</b> <b>Thomas Cherry, PLA, ASLA</b>	Date <b>5/23/2013</b>
	Line				X			X		X					
	Color				X			X				X			
	Texture				X			X				X			

**SECTION D. (Continued)**

Comments from item 2.

The BLM did not respond in a timely manner to a request for a management decision on the final adopted Visual Resource Management Class (VRM Class) or the Interim Visual Resource Management Class (IVRM) designations for the project area. For this analysis, we had to move forward using the presumption that the Visual Resource Inventory Class (VRI Class) has been adopted as the VRM Class. The VRI Class for this area is III.

In determining whether the proposed action would conform to the assigned VRM class, the four levels of contrast roughly correspond with the four VRM classes. This means that a “strong” contrast rating may be acceptable in an area with VRM Class IV, but probably would not meet the objectives of a VRM Class I, II, or III area. Similarly, a “weak” contrast rating may be acceptable in an area with VRM Class II, but probably would not meet the objectives of a VRM Class I area. The table below shows the correlation between contrast rating and determining whether VRM objectives are met.

Degree of Contrast	VRM Class	Definition
None	Class I Preserve	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention. (This classification is usually applied to wilderness areas, wild and scenic rivers, and other similar situations.)
Weak	Class II Retain	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
Moderate	Class III Partially Retain	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
Strong	Class IV Major Modification	The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

The two power towers will protrude above the horizon and will attract attention and produce strong “line” contrasts directly in the cone of vision of eastbound I-10 travelers. Cylindrical form contrasts are moderate, and color and texture contrasts are weak as seen from KOP-10. The two visible power towers will create a major modification of the existing character of the Chuckwalla Valley as seen from the freeway. The proposed project will be a new dominant feature of the landscape visible for miles along the freeway. The project will change the character of the area, and will dominate the view and become the major focus of viewer attention as seen from KOP-10.

The visual character of this portion of the desert will become more developed because of the new Red Bluff Substation and the newly visible power towers. The overall visual impact of the proposed project will continue to convert this to an industrialized solar-electric landscape. However, some viewers may see the development of a solar resource facility as a point of positive visual interest. Taken as a whole, visual impacts to KOP-10 resulting from the proposed project are expected to be significant and unmitigable, per BLM VRM standards, guidelines, and best management practices (BMPs).

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Additional Mitigating Measures (See item 3)

The PSPP EIS identified these Mitigation Measures to aid in reducing visual impact by reducing contrast.

*The implementation of mitigation measures imposed by the Energy Commission as Conditions of Certification for the project also would avoid or reduce impacts on the quality of the human environment. These mitigation measures are summarized here in connection with the impacts they would address, and are set forth in full in Appendix B – APPLICANT PROPOSED MEASURES.*

*VIS-1, Surface Treatment of Project Structures and Buildings*

*VIS-2, Re-vegetation of Disturbed Soil Areas*

*VIS-3, Temporary and Permanent Exterior Lighting*

*VIS-4, Project Design*

*TRANS-6, Heliostat Positioning Plan*

*AQ-SC3, Construction Fugitive Dust Control*

*AQ-SC4, Dust Plume Response Requirement*

*BIO-8, Impact Avoidance and Minimization Measures*

*BIO-22, Decommissioning and Reclamation Plan*

*BLM-VIS-1, Component Color Treatments*

*BLM-VIS-2, Consultation with the NPS Night Sky Program Manager*

No additional mitigation measures beyond these are required because of the view from KOP-10 at I-10 Freeway Eastbound.



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET


Date 4/27/2013

District Palm Springs - South Coast

Resource Area Chuckwalla - Palen

Activity (program) Solar Energy

SECTION A. PROJECT INFORMATION

1. Project Name Palen Solar Electric Generating System (PSEGS)	4. Location Township 5 South Range 17 E Section Multiple Sections	5. Location Sketch 
2. Key Observation Point KOP 12 Chuckwalla-Mtn WA (BLM)		
3. VRM Class VRI Class III VRM Class (Not disclosed by BLM)		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	Planar foreground with deeply incised drainage feature with pyramidal mountains in the background. There is no water visible in this landscape.	Rounded irregular scrub in foreground. Conspicuously unvegetated dry lakebed. Beyond is gradating into lightly mottled background mountains mostly devoid of vegetation.	Dirt road serpentine from foreground to the middle ground. Transmission line towers and highway discernible in the middle ground due to motion associated with the traffic.
LINE	Sinuuous line of drainage feature and highway. Strong complex lines in the background where bajada meets the mountains beyond.	Distinct vegetation lines where vegetation intersects dry lakebed.	Strong horizontal lines of the highway and moderate vertical lines of transmission lines towers.
COLOR	Mottled dark brown patina of the desert varnish of the bajada. Sand colored lake bed. With the pinkish browns of the mountains in the background.	Yellow greens of the creosote bushes blend into the brownish greens as the vegetation blends into the backgrounds grey greens.	Sand colored aggregate road. Brown colored transmission line towers.
TEXTURE	Jumbled rough moderately coarse foreground. Smooth fine textured lake bed. Complex coarse rugged mountains	Medium coarse random foreground. Smooth unvegetated lakebed and background vegetation indistinguishable.	Lattice texture of the transmission towers.

SECTION C. PROPOSED ACTIVITY DESCRIPTION

It is approximately 4.6 miles from KOP-12 to the center of the proposed project (Foregr'd/Middlegr'd distance zone).

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	Middle ground has new horizontal form of heliostat fields occupying a portion of the bajada in front of the dry lakebed area. These forms are often mistaken for a natural body of water when seen at middle ground or background distances.	Barren bajada in front of the dry lakebed is converted to heliostat fields. Foreground and background vegetation forms remain unchanged.	Two 750-foot tall power towers are cylindrical in form; the elevated air cooled condensers are rectangular in form; and the heliostat fields are horizontal in form.
LINE	New horizontal line created by heliostat fields in the middle ground, similar to a natural water body. Sinuous line of drainage feature and highway remains.	Distinct vegetation lines where vegetation intersects the new horizontal heliostat fields, which lie at the base of backdrop mountains.	Strong vertical lines of the two power towers and strong horizontal lines of the air cooled condensers and heliostat fields make horizontal line of the highway and vertical lines of transmission towers become moderate in contrast.
COLOR	Heliostat mirrors reflect both sky and sunlight in the environment, creating a shiny silver and/or blue color, often mistaken for a natural body of water when seen at middle ground or background distances.	Tan color of bajada is converted to shiny silver and/or blue color of the heliostat fields.	Two 750-foot tall cylindrical power towers and the elevated air cooled condensers are warm grey in color; heliostat fields are shiny silver and/or blue in color.
TEXTURE	Heliostat fields resemble natural body of water and are smooth textured.	No change in vegetation texture.	Heliostat fields, the elevated air cooled condensers and the two power towers are smooth textured.



**SECTION D. CONTRAST RATING   ☐ SHORT TERM   ☒ LONG TERM**

1.  DEGREE  OF  CONTRAST		FEATURES												2. Does project design meet visual resource management objectives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Explain on reverse side)
		LANDWATER BODY (1)				VEGETATION (2)				STRUCTURES (3)				
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	
ELEMENTS	Form		X						X	X				3. Additional mitigating measures recommended? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)  Evaluator's Names Lee Roger Anderson, CA LLA#1586 Peter Langenfeld Timothy R Zack Thomas Cherry, PLA, ASLA  Date 5/22/2013
	Line		X						X	X				
	Color	X							X	X				
	Texture			X					X			X		

**SECTION D. (Continued)**

Comments from item 2.

The BLM did not respond in a timely manner to a request for a management decision on the final adopted Visual Resource Management Class (VRM Class) or the Interim Visual Resource Management Class (IVRM) designations for the project area. For this analysis, we had to move forward using the presumption that the Visual Resource Inventory Class (VRI Class) has been adopted as the VRM Class. The VRI Class for this area is III.

In determining whether the proposed action would conform to the assigned VRM class, the four levels of contrast roughly correspond with the four VRM classes. This means that a "strong" contrast rating may be acceptable in an area with VRM Class IV, but probably would not meet the objectives of a VRM Class I, II, or III area. Similarly, a "weak" contrast rating may be acceptable in an area with VRM Class II, but probably would not meet the objectives of a VRM Class I area. The table below shows the correlation between contrast rating and determining whether VRM objectives are met.

Degree of Contrast	VRM Class	Definition
None	Class I Preserve	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention. (This classification is usually applied to wilderness areas, wild and scenic rivers, and other similar situations.)
Weak	Class II Retain	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
Moderate	Class III Partially Retain	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
Strong	Class IV Major Modification	The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

The strong contrasts of form, line, and color created by the proposed project will create a major modification of the existing character of the Chuckwalla Valley and Palen Dry Lake as seen against the backdrop of the Palen Mountains. The proposed project will be a new dominant feature of the landscape visible from travel routes and use areas in the viewshed. The project will change the existing visual character of the viewshed. The two 750-foot-tall solar power towers are the most visually noticeable elements, and from this view at KOP-12, the heliostat fields are highly visible too. The project will change the character of the area, and will dominate the view and become the major focus of viewer attention as seen from KOP-12.

The visual character of Palen Dry Lake will change from open space desert to that of a developed landscape. The overall visual impact of the proposed project is expected to completely alter the existing undeveloped scenic quality of this naturally evolving landscape, and convert it to an industrialized solar-electric landscape. However, some viewers may see the development of a solar resource facility as a point of positive visual interest. Taken as a whole, visual impacts to KOP-12 resulting from the proposed project are expected to be significant and un-mitigable, per BLM VRM standards, guidelines, and best management practices (BMPs).



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Additional Mitigating Measures (See item 3)

The PSPP EIS identified these Mitigation Measures to aid in reducing visual impact by reducing contrast.

*The implementation of mitigation measures imposed by the Energy Commission as Conditions of Certification for the project also would avoid or reduce impacts on the quality of the human environment. These mitigation measures are summarized here in connection with the impacts they would address, and are set forth in full in Appendix B – APPLICANT PROPOSED MEASURES.*

*VIS-1, Surface Treatment of Project Structures and Buildings*

*VIS-2, Re-vegetation of Disturbed Soil Areas*

*VIS-3, Temporary and Permanent Exterior Lighting*

*VIS-4, Project Design*

*TRANS-6, Heliostat Positioning Plan*

*AQ-SC3, Construction Fugitive Dust Control*

*AQ-SC4, Dust Plume Response Requirement*

*BIO-8, Impact Avoidance and Minimization Measures*

*BIO-22, Decommissioning and Reclamation Plan*

*BLM-VIS-1, Component Color Treatments*

*BLM-VIS-2, Consultation with the NPS Night Sky Program Manager*

No additional mitigation measures beyond these are required because of the view from KOP-12 Chuckwalla-Mtn. WA (BLM).

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET


Date 4/27/2013

District Palm Springs - South Coast

Resource Area Chuckwalla - Palen

Activity (program) Solar Energy

SECTION A. PROJECT INFORMATION

1. Project Name Palen Solar Electric Generating System (PSEGS)	4. Location Township 5 South	5. Location Sketch 
2. Key Observation Point KOP 13 I-10 Freeway Westbound	Range 17E	
3. VRM Class VRI Class III VRM Class (Not disclosed by BLM)	Section Multiple Sections	

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	Planar foreground extends for miles with mountains in the background. There is no water visible in this landscape.	Rounded forms of creosote scrub and tumbleweed in foreground. Gradating to solid vegetation.	Trapezoidal road bed is dominant. Linear transparent fence.
LINE	Indistinguishable lines in foreground. Strong horizontal line of desert floor at the base of background mountains. Jagged silhouette of the Eagle Mountains at the horizon.	Distinct horizontal vegetation lines at base of mountains	Strong horizontal lines of interstate freeway and fence leading straight away from the viewer.
COLOR	Tan colored sand in foreground and middle ground. Grey blue mountains at horizon.	Yellow greens of the creosote bushes blend into the brownish greens as the vegetation blends into the background's grey greens.	Dark grey freeway roadbed and reddish brown fence posts.
TEXTURE	Smooth ground plane. Texture of distant mountains is indistinguishable.	Medium grained random foreground. Transitioning to stippled in the middle ground	Smooth textured freeway roadbed.

SECTION C. PROPOSED ACTIVITY DESCRIPTION

It is approximately 6.4 miles from KOP-13 to the center of the proposed project (Background distance zone).

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	No change.	No change.	Two power towers create new vertical cylindrical forms and one of the elevated air cooled condensers create rectangular forms approximately 6.4 miles away in the background distance zone, as defined by the BLM.
LINE	No change.	No change.	Two power towers create strong new vertical lines in the landscape that protrude about the horizon in this relatively flat horizontal landscape. One of the elevated air cooled condensers creates a horizontal line at the base of the tower.
COLOR	No change.	No change.	Two power towers and the elevated air cooled condenser are medium grey at this distance.
TEXTURE	No change.	No change.	Two power towers and the elevated air cooled condenser are smooth textured.



**SECTION D. CONTRAST RATING   ☐ SHORT TERM   ☒ LONG TERM**

1.  <b>DEGREE OF CONTRAST</b>		<b>FEATURES</b>												2. Does project design meet visual resource management objectives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Explain on reverse side)
		<b>LANDWATER BODY (1)</b>				<b>VEGETATION (2)</b>				<b>STRUCTURES (3)</b>				
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	
<b>ELEMENTS</b>	Form				X				X		X			3. Additional mitigating measures recommended? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)
	Line				X				X	X				
	Color				X				X			X		
	Texture				X				X			X		
Evaluator's Names: Lee Roger Anderson, CA LLA#1586   Date: 5/23/2013 Peter Langenfeld Timothy R Zack Thomas Cherry, PLA, ASLA														

**SECTION D. (Continued)**

Comments from item 2.

The BLM did not respond in a timely manner to a request for a management decision on the final adopted Visual Resource Management Class (VRM Class) or the Interim Visual Resource Management Class (IVRM) designations for the project area. For this analysis, we had to move forward using the presumption that the Visual Resource Inventory Class (VRI Class) has been adopted as the VRM Class. The VRI Class for this area is III.

In determining whether the proposed action would conform to the assigned VRM class, the four levels of contrast roughly correspond with the four VRM classes. This means that a “strong” contrast rating may be acceptable in an area with VRM Class IV, but probably would not meet the objectives of a VRM Class I, II, or III area. Similarly, a “weak” contrast rating may be acceptable in an area with VRM Class II, but probably would not meet the objectives of a VRM Class I area. The table below shows the correlation between contrast rating and determining whether VRM objectives are met.

Degree of Contrast	VRM Class	Definition
None	Class I Preserve	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention. (This classification is usually applied to wilderness areas, wild and scenic rivers, and other similar situations.)
Weak	Class II Retain	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
Moderate	Class III Partially Retain	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
Strong	Class IV Major Modification	The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

The two power towers will protrude above the horizon and will attract attention and produce strong “line” contrasts. Form contrasts are moderate, and color and texture contrasts are weak as seen from the westbound freeway. The two visible power towers will create a major modification of the existing character of the Chuckwalla Valley as seen from the freeway. The proposed project will be a new dominant feature of the landscape visible for miles along the freeway. The project will change the character of the area, and will dominate the view and become the major focus of viewer attention as seen from KOP-13.

The visual character of this portion of the desert will change from open space to that of a developed landscape. The overall visual impact of the proposed project is expected to strongly alter the existing undeveloped scenic quality of this naturally evolving landscape, and convert it to an industrialized solar-electric landscape. However, some viewers may see the development of a solar resource facility as a point of positive visual interest. Taken as a whole, visual impacts to KOP-13 resulting from the proposed project are expected to be significant and un-mitigable, per BLM VRM standards, guidelines, and best management practices (BMPs).

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Additional Mitigating Measures (See item 3)

The PSPP EIS identified these Mitigation Measures to aid in reducing visual impact by reducing contrast.

*The implementation of mitigation measures imposed by the Energy Commission as Conditions of Certification for the project also would avoid or reduce impacts on the quality of the human environment. These mitigation measures are summarized here in connection with the impacts they would address, and are set forth in full in Appendix B – APPLICANT PROPOSED MEASURES.*

*VIS-1, Surface Treatment of Project Structures and Buildings*

*VIS-2, Re-vegetation of Disturbed Soil Areas*

*VIS-3, Temporary and Permanent Exterior Lighting*

*VIS-4, Project Design*

*TRANS-6, Heliostat Positioning Plan*

*AQ-SC3, Construction Fugitive Dust Control*

*AQ-SC4, Dust Plume Response Requirement*

*BIO-8, Impact Avoidance and Minimization Measures*

*BIO-22, Decommissioning and Reclamation Plan*

*BLM-VIS-1, Component Color Treatments*

*BLM-VIS-2, Consultation with the NPS Night Sky Program Manager*

No additional mitigation measures beyond these are required because of the view from KOP-13 I-10 Freeway Westbound.



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET


Date 5/01/2013

District Palm Springs - South Coast

Resource Area Chuckwalla - Palen

Activity (program) Solar Energy

SECTION A. PROJECT INFORMATION

1. Project Name Palen Solar Electric Generating System (PSEGS)	4. Location Township 5 South Range 17E Section Multiple Sections	5. Location Sketch 
2. Key Observation Point KOP 15 Palen / McCoy WA (BLM)		
3. VRM Class VRI Class III VRM Class (Not disclosed by BLM)		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

1. LANDWATER		2. VEGETATION	3. STRUCTURES
FORM	Jagged rough step pyramidal mountains in foreground. Sloping planar bajada. Flat planar dry lake bed. Indistinct pyramidal distant mountains. There is no water visible in this landscape.	Mountain foreground sparsely vegetated with clumps of grass. Creosote scrub desert floor. Small rectangular agricultural field.	None apparent.
LINE	Jagged sawtooth mountain ridge. Distinct simple horizontal line where bajada meets dry lakebed. Jagged skyline silhouette of distant mountains.	Distinct horizontal vegetation lines at base of mountains. Unvegetated drainage channels meander on bajada.	None apparent.
COLOR	Foreground reddish brown mountains. Brown mottled bajada. Sand colored dry lake bed. Pinkish mountains in background.	Sparse tan bunchgrass in foreground. Blue greens of bajada give way to tan of dry lakebed with green agricultural fields in the distance.	None apparent.
TEXTURE	Coarse textured rockforms in rugged foreground mountains transitioning to smooth textured bajada and dry lakebed, with rugged mountains in the background.	None apparent.	None apparent.

SECTION C. PROPOSED ACTIVITY DESCRIPTION

It is approximately 6.1 miles from KOP-15 to the center of the proposed project (Background distance zone).

1. LANDWATER		2. VEGETATION	3. STRUCTURES
FORM	Middleground has new horizontal form of heliostat fields occupying a portion of the bajada beyond the dry lakebed area. These forms are often mistaken for a natural body of water when seen at middleground or background distances.	Barren bajada beyond the dry lakebed is converted to horizontal heliostat fields. Foreground and background vegetation forms remain unchanged.	Two 750-foot tall power towers are cylindrical in form; the elevated air cooled condensers are rectangular in form; and the heliostat fields are horizontal in form.
LINE	New horizontal line created by heliostat fields in the middleground, similar to a natural water body.	Distinct vegetation line where vegetation intersects the new horizontal heliostat fields.	Strong vertical lines of the two power towers. Strong horizontal lines of the heliostat fields and moderate horizontal lines of the elevated air cooled condensers.
COLOR	Heliostat mirrors reflect both sky and sunlight in the environment, creating a shiny silver and/or blue color, often mistaken for a natural body of water when seen at middleground or background distances.	Tan color of bajada converted to shiny silver and/or blue color of the heliostat fields.	Two 750-foot tall cylindrical power towers and the elevated air cooled condensers are warm grey in color; heliostat fields are shiny silver and/or blue in color.
TEXTURE	Heliostat fields resemble natural body of water and are smooth textured.	No change in vegetation texture.	Heliostat fields, the elevated air cooled condensers and the two power towers are smooth textured.



**SECTION D. CONTRAST RATING   ☐ SHORT TERM   ☒ LONG TERM**

1.  DEGREE  OF  CONTRAST		FEATURES												2. Does project design meet visual resource management objectives? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Explain on reverse side)	
		LANDWATER BODY (1)				VEGETATION (2)				STRUCTURES (3)					
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None		
ELEMENTS	Form			X					X	X					3. Additional mitigating measures recommended? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)
	Line			X					X	X					
	Color	X							X	X					
	Texture			X					X			X			
															Evaluator's Names <span style="float: right;">Date</span> Lee Roger Anderson, CA LLA#1586 <span style="float: right;">5/22/2013</span> Peter Langenfeld Timothy R Zack Thomas Cherry, PLA, ASLA

**SECTION D. (Continued)**

Comments from item 2.

The BLM did not respond in a timely manner to a request for a management decision on the final adopted Visual Resource Management Class (VRM Class) or the Interim Visual Resource Management Class (IVRM) designations for the project area. For this analysis, we had to move forward using the presumption that the Visual Resource Inventory Class (VRI Class) has been adopted as the VRM Class. The VRI Class for this area is III.

In determining whether the proposed action would conform to the assigned VRM class, the four levels of contrast roughly correspond with the four VRM classes. This means that a "strong" contrast rating may be acceptable in an area with VRM Class IV, but probably would not meet the objectives of a VRM Class I, II, or III area. Similarly, a "weak" contrast rating may be acceptable in an area with VRM Class II, but probably would not meet the objectives of a VRM Class I area. The table below shows the correlation between contrast rating and determining whether VRM objectives are met.

Degree of Contrast	VRM Class	Definition
None	Class I Preserve	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention. (This classification is usually applied to wilderness areas, wild and scenic rivers, and other similar situations.)
Weak	Class II Retain	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
Moderate	Class III Partially Retain	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
Strong	Class IV Major Modification	The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

The strong contrasts of form, line, and color created by the proposed project will create a major modification of the existing character of the Chuckwalla Valley and Palen Dry Lake, as seen against the backdrop of the Chuckwalla Mountains. The proposed project will be a new dominant feature of the landscape visible from travel routes and use areas in the viewshed. The project will change the existing visual character of the viewshed. The two 750-foot-tall solar power towers are the most visually noticeable elements, and from this view at KOP-15, the heliostat fields are highly visible too. The project will change the character of the area, and will dominate the view and become the major focus of viewer attention as seen from KOP-15.

The visual character in the area of Palen Dry Lake will change from open space desert to that of a developed landscape. The overall visual impact of the proposed project is expected to completely alter the existing undeveloped scenic quality of this naturally evolving landscape, and convert it to an industrialized solar-electric landscape. However, some viewers may see the development of a solar resource facility as a point of positive visual interest. Taken as a whole, visual impacts to KOP-15 resulting from the proposed project are expected to be significant, and un-mitigable, per BLM VRM standards, guidelines, and best management practices (BMPs). Therefore, the proposed project will not comply with the definition of Class III, above, as

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Additional Mitigating Measures (See item 3)

The PSPP EIS identified these Mitigation Measures to aid in reducing visual impact by reducing contrast.

*The implementation of mitigation measures imposed by the Energy Commission as Conditions of Certification for the project also would avoid or reduce impacts on the quality of the human environment. These mitigation measures are summarized here in connection with the impacts they would address, and are set forth in full in Appendix B – APPLICANT PROPOSED MEASURES.*

*VIS-1, Surface Treatment of Project Structures and Buildings*

*VIS-2, Re-vegetation of Disturbed Soil Areas*

*VIS-3, Temporary and Permanent Exterior Lighting*

*VIS-4, Project Design*

*TRANS-6, Heliostat Positioning Plan*

*AQ-SC3, Construction Fugitive Dust Control*

*AQ-SC4, Dust Plume Response Requirement*

*BIO-8, Impact Avoidance and Minimization Measures*

*BIO-22, Decommissioning and Reclamation Plan*

*BLM-VIS-1, Component Color Treatments*

*BLM-VIS-2, Consultation with the NPS Night Sky Program Manager*

No additional mitigation measures beyond these are required because of the view from KOP-15 in the Palen / McCoy WA.



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET


Date 4/28/2013

District Palm Springs - South Coast

Resource Area Chuckwalla - Palen

Activity (program) Solar Energy

SECTION A. PROJECT INFORMATION

1. Project Name Palen Solar Electric Generating System (PSEGS)	4. Location Township 5 South Range 17E Section Multiple Sections	5. Location Sketch 
2. Key Observation Point KOP 17 Bradshaw Trail, Mule Mtn. (LTVA)		
3. VRM Class VRI Class III VRM Class (Not disclosed by BLM)		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	Planar ground plane in foreground. Pyramidal mountains in background.	Sparsely rounded clumpy vegetation in foreground. Taller line of riparian woodland blocks middleground. Indistinct vegetation forms in background.	Linear fence line in foreground. Geometric outhouses partially screened by creosote scrub.
LINE	Jagged silhouettes of distant mountains.	Horizontal line of riparian woodland obscures the middleground.	Horizontal fence line, with vertical fence posts, vertical and diagonal lines of out houses.
COLOR	Tan desert sands blue grey mountains	Grey-green creosote scrub. Green riparian canopy.	Rust colored fence. Tan outhouses with black vent pipes
TEXTURE	Smooth foreground. Rugged rough background mountains	Coarse and irregular creosote scrub and riparian vegetation.	Smooth textured outhouses.

SECTION C. PROPOSED ACTIVITY DESCRIPTION

It is approximately 23.0 miles from KOP-17 to the center of the proposed project (Seldom Seen distance zone).

	1. LANDWATER	2. VEGETATION	3. STRUCTURES
FORM	No change.	No change.	No change.
LINE	No change.	No change.	No change.
COLOR	No change.	No change.	No change.
TEXTURE	No change.	No change.	No change.



**SECTION D. CONTRAST RATING   ☐ SHORT TERM   ☐ LONG TERM (NO CONTRAST – NOT VISIBLE)**

1.		DEGREE OF CONTRAST	FEATURES												2. Does project design meet visual resource management objectives? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain on reverse side)
			LANDWATER BODY (1)				VEGETATION (2)				STRUCTURES (3)				
			Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	
			Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	
ELEMENTS	Form				X				X				X	3. Additional mitigating measures recommended? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Explain on reverse side)	
	Line				X				X				X		
	Color				X				X				X		
	Texture				X				X				X		
Evaluator's Names <span style="float: right;">Date</span> Lee Roger Anderson, CA LLA #1586 <span style="float: right;">5/23/2013</span> Peter Langenfeld Timothy R Zack Thomas Cherry, PLA, ASLA															

**SECTION D. (Continued)**

Comments from item 2.

The proposed project is not visible from KOP-17.

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Additional Mitigating Measures (See item 3)

The PSPP EIS identified these Mitigation Measures to aid in reducing visual impact by reducing contrast.

*The implementation of mitigation measures imposed by the Energy Commission as Conditions of Certification for the project also would avoid or reduce impacts on the quality of the human environment. These mitigation measures are summarized here in connection with the impacts they would address, and are set forth in full in Appendix B – APPLICANT PROPOSED MEASURES.*

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*BLM-VIS-1, Component Color Treatments*

*BLM-VIS-2, Consultation with the NPS Night Sky Program Manager*

No additional mitigation measures beyond these are required because of the view from KOP-17 Bradshaw Trail, Mule Mtn. (LTVA).